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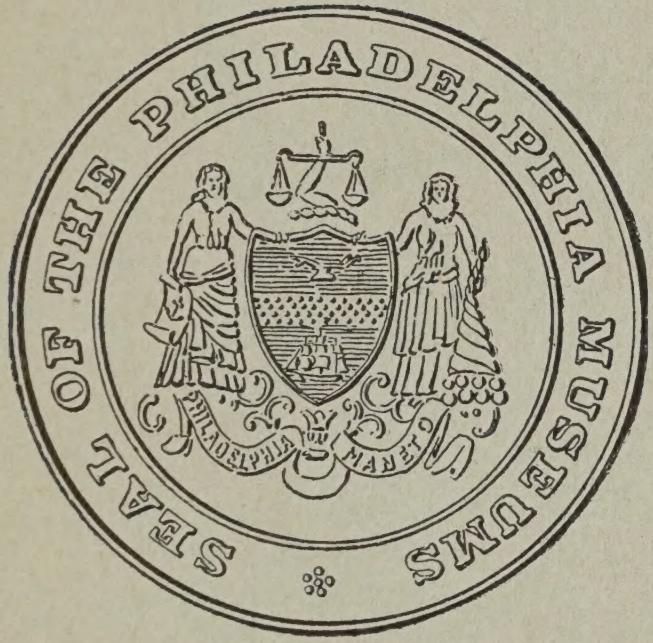
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THE REPUBLIC OF COSTA RICA



BY

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THE PHILADELPHIA
COMMERCIAL MUSEUM

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OF COSTA RICA



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THE PHILADELPHIA
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Introduction.

THIS monograph treats of the topography, geology, mineral wealth and soils of Costa Rica; it describes its climate and presents the details of its flora and fauna with reference to their economic value; it displays the distribution of population according to race, wealth, communities and social conditions; it examines the agricultural development of the Republic, including its live stock and forests; and, finally, it recounts the most important features of its commerce, industry, finance, and of its economic and political conditions.

It is made up of observations and studies pursued in 1897 and 1898, during seven and a half months of economic and scientific explorations in Central America, and of facts garnered with great care from authoritative manuscripts, books and official documents and publications. Respect has been shown to the work of men of originality in research and thought, and care has been taken to adhere closely to the original text when either quoting or translating. I am especially indebted to Professor H. Pittier, whose great qualifications for a scientific exploration of Costa Rica cannot be overestimated; to Mr. Anastasio Alfaro, the Director of the National Museum; to Mr. Manuel Aragon, the Director General of the National Statistical Department; to Dr. Juan Ullua, the Minister of Fomento; to Joaquin B. Calvo, Minister Resident in Washington; and Mr. Rafael Iglesias, the able President of the Republic of Costa Rica.

The State of Costa Rica.

I.

TOPOGRAPHY, GEOLOGY AND MINERAL WEALTH.

Costa Rica, the southernmost Republic of Central America, is advantageously situated within the North tropical zone, adjoining Colombia, the most northern state of South America. It is between the two great oceans, having also the prospect of one inter-oceanic ship-canal at one extremity and another ship-canal near the other.

Costa Rica is between 8° and $11^{\circ} 16'$ N. latitude and $81^{\circ} 35'$ and $85^{\circ} 40'$ W. longitude from Greenwich. Its area is between 54,070 and 59,570 sq. kilometers, the difference arising from the boundary line unsettled with Colombia. We follow here Colonel George Earl Church's paper in the London Geographical Journal of July, 1897, which gives in a condensed form all important results of extensive explorations by Professor H. Pittier as well as well-written abstracts of important publications of the "Instituto fisico geografico Nacional" and of the "Museo Nacional" of Costa Rica.

The mountains of Costa Rica are not a continuous Cordillera, although in general they extend from the frontier of

Colombia to within a few miles of Brito. The entire country may properly be divided into two distinctive groups by a natural line running between the mouths of the Reventazon and Rio Grande de Pirris; groups which can be called "volcanic mountains" or "mountains of the northwest," and "Talamanca mountains" or "mountains of the southeast." It is clear that the Caribbean Sea once joined the Pacific Ocean through this valley of the river Reventazon in which the Costa Rica Railway now climbs to reach Cartago. In weighing existing data there seems to be no room for doubt that the highlands of Costa Rica once formed part of a vast archipelago extending from Panama to Tehuantepec. The lowest inter-oceanic depressions between the Arctic Ocean and the Straits of Magellan are the divide between the two oceans at Panama which is 286 feet above the sea level, and the narrow strip of land separating Lake Nicaragua from the Pacific, which has only about 150 feet elevation.

The "volcanic mountains" or "the mountains of the northwest" can again be divided into two sections. The first comprises the part situated between the Rio Reventazon and a depression which connects San Ramon with the water-shed of San Carlos, including the groups of the volcanoes Turrialba (11,000 feet), Irazú (11,200 feet), Barba (9335 feet) and Poas (8675 feet). The second section comprises the part which extends from the Barranca River to the Lake of Nicaragua with the groups of Tilaran, Miravalles, La Vieja and Orosi.

The first section may be called "Cordillera Central" or "Cordillera del Irazú" and the second "Cordillera del Miravalles." The three masses which form the volcanic Cordillera of Irazú are separated by two depressions: first by that of La Palma, 1500 meters above the sea, between Irazú and Barba, and second by that of Desengáño, 1800 meters above the sea, between Barba and Poas.

The basis of the two western masses seems to be formed of basaltic rocks, while the trachytes dominate in the eastern mass. Irazú and Turrialba, which is part of the same mass, seem to have ejected lavas in a compact state. The height of volcanoes diminishes towards the west.

The three orographic groups which dominate the

northern central plateau do not show the regular conical form which usually characterizes a volcano. The general line of the southern slopes ascends in an imperceptible manner towards the summit, notwithstanding that they are composed of a succession of terrace plains. On the Irazú, for instance, eight such terraces are observable from Cartago to the summit. The northern declivity is more precipitous, being over 60° on the Irazú.

The peak of the Irazú is a point from which go various spurs and secondary mountains in opposite directions, one to the west and one to the east, the latter terminating in a crater where the Parismina River takes its origin. The western mountains trend first in a westerly direction to the Cerro Pelon, where they divide, one part descending south to the pass of Ochomogo, 1540 meters above sea-level; the other, after taking a northwesterly direction, terminating in the plain of La Palma, which is a part of the water-shed of the two oceans. On the south various mountains follow the rivers Pirris and Turrialba. The Irazú has various craters, formed successively, each one contributing to the gradual rising of the mass.

The Irazú, which had eruptions in 1723, 1726, 1821 and 1847, has now an altitude of 3414 m. (11,200 feet), and from its summit both oceans are visible, and also the great valleys of San Juan and of Lake Nicaragua, as well as the mountains of Pico Blanco, Chirripo, Buena Vista and Las Vueltas. Turrialba had a famous eruption of sand and ashes which began on the 17th of August, 1864, and lasted to March, 1865. Its heaviest ejected matter fell to the west, and Seebach classifies it as andesite. Another eruption, occurring on February 6, 1866, was accompanied by heavy earthquakes and sent its ashes as far as Puntarenas.

The Cordillera del Miravalles commences with the volcano Orosi, situated near the southwest extremity of Lake Nicaragua. In its southeast trend it recedes more and more from the lake and the San Juan River. It is an irregular, broad and volcano-dotted chain, about sixty geographical miles long, breaking down gradually on the northwest from Orosi to the Sapoá River, one of the southern boundaries of

Nicaragua. In this short distance are found the Cerro de la Vieja (6508 feet), the Montemuelto (8000 feet), the beautiful volcano Tenorio (6700 feet), the volcanoes Miravalles (4665 feet), the Rincon (4498 feet), and the Orosi (5195 feet).

These mountains, as far as they have been examined, are found to be of eruptive origin, basalts and trachytes predominating, but extensive sedimentary rock formations are also found upon their slopes, as well as vast deposits of boulders, clay, earth and volcanic material.

The peninsula of Nicoya, forming a part of Guanacaste, is partly an elevated plain and partly consists of hills and mountain ridges seldom attaining a greater elevation than 1500 feet. It is also composed of eruptive rocks and sedimentary formations, the latter being especially visible in the valley of Tempisque.

Between the northern volcanic section and the more regular Talamanca range is the notable "Ochomogo" Pass, about twenty miles broad, and a little more than 5000 feet above the sea-level at the water parting.

To the eastward through this gap, and in a broad, deeply eroded valley, runs the tumultuous Reventazon River, and to the westward the Rio Grande de Pirris. On the south of this depression the Chirripo Grande mountain mass sends off east and west two immense flanking ranges. A part of the western range, lying between San Marcos and Santa Maria, for a length of about six miles, is known as the Dota ridge, to which former explorers gave great importance.

This lofty, transverse and precipitous mountain system almost forbids communication between the northern and southern halves of the Republic, and, as Colonel Church says, must at all times have had a marked influence on the movement of races in this part of Central America. Both the northern and Talamanca sections present mountains in masses instead of serrated like many Andean chains of North America. Those of the Talamanca section are Rovalo (7050 feet), Pico Blanco (9650 feet), Chirripo Grande (11,850 feet) and Buena Vista (10,820 feet). There are no signs of recent volcanic activity in the Talamanca range. The Talamanca mountains have narrow crests and are very precip-

itous on the Atlantic side, with evidences of extensive denudations and erosions caused by the ceaseless rain-laden trade-winds.

Professor William M. Gabb, in his geological sketch of Talamanca, observes that the geological structure of the entire region is very simple. The greatest expanse is occupied by recent sedimentary rocks raised and nearly entirely metamorphosed by the action of volcanic masses.

At several points along the Atlantic coast, there are found masses of rocks of still later date. Professor Gabb maintains that the nucleus of the great Cordillera of the interior is formed by granites and syenites, which, like the sediment that covers them, are broken through here and there by dikes of volcanic origin identical with the eruptive material found on a greater scale in the northern part of Costa Rica. The syenites are intrusive and have their culminating point and greatest development in the Pico Blanco or Kamuk, a mountain of great altitude, unusual ruggedness and scarred with deep and precipitous cañons. All these dikes are of more modern formation and are porphyritic. Professor Gabb also notes a thick deposit of conglomerates and sandstones, schists and limestones, the schists being the most abundant; although the conglomerates, found all over the region, indicate the previous existence of an older sedimentary formation.

The pebbles which form the conglomerates are composed of metamorphic clay, having a character distinct from all the other rocks found in the country. The cement is also clay or sand. The absence of crystalline rocks in the conglomerates is irrefutable proof that, when these were deposited, the syenites and granites had not yet appeared from the interior of the earth. The limestone and sandstone represent a less developed geographical horizon of the sedimentary group, the latter appearing occasionally in layers, interstratified with conglomerates or more recent schists. In no place in Talamanca have fossils been found in these sandstones, although the same rocks are very fossiliferous near Zapote on the River Reventazon.

In regard to fossils, Professor Gabb saw at Las Lomas Station, about seven hundred feet above the sea, in the Bonilla

Cliffs cutting, shark's teeth, compact masses of sea shells, fish, etc, and at an elevation of 2500 feet large deposits of compact shell limestone.

The schists have a fine, leaf-like texture, and are easily decomposed and reduced to a black mud, if they have not been metamorphosed. In this rock fossils have been found which belong to a Miocene age.

Along the Talamanca coast calcareous deposits are found in horizontal layers, and are probably elevated coral reefs, a rock which Professor Gabb calls "antillite," and which is developed in the entire Caribbean region. It belongs to the post-Pliocene formation, the last of the Tertiary series.

In the interior valleys a thick deposit of pebbles and clays of recent origin is observed. The limit between the syenites of the high mountains and the metamorphosed Miocene formation is found in proximity to the Depuk River. In the slopes of the hills the schists are usually decomposed and covered with red clay, a sub-soil above which is found a small cap of fertile vegetable mold. In the valley of Tsuku the schists are profoundly altered and transformed in a magnesian or semi-talcous rock. The schists are more silicified in coming near to the limits of the syenites.

Higher up, the granitic rocks extend in the direction of the Pico Blanco without interruption. The Pico Blanco itself is of granite. Three hundred feet below the summit porphyry is observed, while the summit itself shows a greenish-brown trachyte with black spots.

In regard to the Pacific side of this Talamanca section, Professor H. Pittier says, "The southern coast Cordillera, as a whole, is formed of a nucleus of basaltic or syenitic rocks, above which are found successively limestone in very deep banks and sometimes fossiliferous; then argillaceous and marly schists; again, sandstone and conglomerates, the latter forming generally the crests of the hills and giving way very easily to atmospheric action, which produces its decomposition and is the cause of sterile lands characterized by savannas and the absence of forests on the upper parts of the mountains, as well as in certain lower and denuded parts.

The conglomerates are made up of heterogeneous elements whose resistance to erosion is variable. Some disintegrate as soon as they are exposed to erosion, while others remain unaltered for a long time. For this reason the savannas are in many places covered with stones of varied sizes.

The lower valley of the Pirris presents a cap of impervious red clay, and as the waters do not readily drain off they become stagnant and make an unhealthy district.

Dr. Frantzius, referring to the same region, speaks of diorites and syenites, also of calcareous deposits of the Miocene age covered with sandstone formations containing useful lignites. In his opinion the mountain of Dota is formed almost entirely of dioritic rocks with some syenitic nucleus. The same scientist says further that the high plains of Caños Gordas are formed of conglomerates of ashes ejected by the volcano of Chiriquí and brought there by the trade-winds which prevail in Central America.

The Pacific slope, which comes boldly to the water's edge, is margined almost throughout by headlands and lofty hills, and has fewer evidences of extensive denudations and erosions than the Atlantic coast.

There is also a notable difference between the outlines of the two coasts. The eastern is regular and slightly concave to the southwest, while the western is indented with large and small bays and gulfs.

The most northern of these bays is the Salinas, belonging partly to Nicaragua and partly to Costa Rica. It is a spacious deep-water harbor, overlooked by the volcanic peak of Orosi. It is separated from the adjoining bay, the Santa Elena, by Sacate Point.

Continuing south, we come, south of Cacique Point, to Port Culebra, which is a mile wide, with a depth of eighteen fathoms. At the outlet of this harbor lies Cocos Bay, capacious enough for a thousand ships to anchor in the roadstead. The coast line south of Cocos Bay, bordered by numerous and lofty hills and cut into gorges by small impetuous water courses, presents no harbor as far as Cape Blanco, which is at the western entrance of the extensive Gulf of Nicoya. The gulf extends fifty miles to the northwest and is

a magnificent sheet of water, surrounded by green scenery, rivaling, if not surpassing, that of the Bay of Naples, the Bosphorus, or the harbor of Rio de Janeiro. Some twenty islands, large and small, nearly all bold, rocky and covered with vegetation, contribute to its beauty, while many small rivers, draining the slopes of the Miravalles and Tilaran sierras and the mountains of the peninsula of Nicoya, flow into it and diversify the scenery. The principal river, the Tempisque, enters at the head of the gulf, and with numerous small branches irrigates much of the province of Guanacaste.

All of the streams have bars at their mouths, composed generally of mud and broken shells, and but few of them are navigable even for a short distance inland, and then by very small craft. The whole eastern part of the peninsula of Nicoya is broken into hills and low mountains, wild and rarely cultivated, although there are many beautiful and fertile valleys. The west side of the gulf is full of reefs, rocks, violent currents, eddies that run from one to three and a half miles an hour, and is subject to violent squalls coming from the northwestern sierras. The eastern shore is less beset by obstructions, and small craft go along it with ease, and at high tide penetrate a few of its many rivers. It rises rapidly a short distance inland, but is at times bordered by mangrove swamps.

Near the mouth of the river Aranjuez, on a sand spit three miles long, stands Puntarenas, the only port of entry of Costa Rica on the Pacific coast, and which had, from 1814 until recently, nearly the entire foreign trade of the country. Ocean vessels anchor from one to two miles off in the roadstead. There is an iron pier for loading and discharging.

From Puntarenas southward to the unnavigable Barranca River there is a broad beach lying at the foot of the high escarpment of Caldera.

The Rio Grande de Tarcoles, which enters the gulf south of the Barranca, has a dangerous bar, but once inside it may be navigated a few miles. Its upper waters irrigate the table-land of San José, Alajuela and Heredia. In the neighborhood of these towns is garnered nearly the entire coffee crop of Costa Rica. The coast line south is rocky and precipitous

until near Punta Mala, or Judas, at the southeastern mouth of the gulf, and is low and surrounded by reefs and rocks.

From Point Judas, low and covered with mangrove swamps, the coast trends southeast in a long angular curve for about one hundred marine miles to Point Llorena. It is dominated by lofty hills, cut through at intervals by short impetuous streams and a few estuaries. The only safe and excellent anchorage in this one hundred miles is Uvita Bay, behind a rocky reef. From the precipitous headline, called Punta Llorena, to Burica Point, the southern limit of Costa Rica, the coast is abrupt, soon rising into ridges and peaks from 300 to 700 meters high (985 to 2300 feet). These give birth to a few short turbulent streams. About half way between these two points the great Golfo Dulce, having a main width of six miles, penetrates inland northwest about twenty-eight miles. It has an average depth of one hundred fathoms.

Cape Matapalo, which marks its western entrance, is deep and forest covered, but Banco Point, opposite to it, is low. At the head of the gulf is found the little Bay of Rincon. From here to the Esquinas River, at the northeast angle of the gulf, the shore is hilly, and thence to the harbor of Golfito, which is surrounded by high hills, the country rises rapidly inland, but between Golfito and the entrance to the gulf it is lower and less broken, and thence to Platanal Point and Burica Point, the coast is bold, the country descending gradually from the northeast.

From Point Llorena to Point Burica the coast is wild and almost uninhabited. The coasts of Golfo Dulce have but a few hundred half-breeds as their sole occupants.

There are but two rivers in the long coast line from the Gulf of Nicoya to the Golfo Dulce, the Rio Grande de Pirris, and the Rio Grande de Terraba, the head waters of the former flowing through deep canyons with steep sides, which are almost bare of vegetation until the region of Guaitil is reached, where dense forests are encountered. The valley of the Rio Grande de Terraba is one of the most beautiful, extensive and fertile of Costa Rica, but is occupied by only a few families. Formerly it was the home of a large indigenous population.

In the angle made by the River Buena Vista and Chirripo, there is a vast ancient cemetery, the graves of which contain many ornaments of gold, principally eagles. An ancient road runs by near this place.

Turning to the hydrographic basin of the San Juan River and Lake Nicaragua, the northeastern slope of the Miravalles range is found to send off several small streams to the lake.

Between Cuajiniquil, two and one-fourth miles east of Rio Sapoá, and Tortuga, six miles further east, are the little streams, Lapita, El Cangrejo, Puente de Piedra, La Vivora, Guabo, Genizaro and Tortuga, the latter the greatest in volume, being about one hundred and sixty feet wide at its mouth and navigable. In the further distance of seventeen miles going east, we cross the rivers Zavalos, Cañitas, Quesera, Mena, Mico, Sapotillo, Quijada, Quijadita, Santa Barbara, Sardinia, Barreal, Cañas, Perrito and, finally, Las Haciendas which is navigable by small boats. From here to San Carlos, at the outlet of Lake Nicaragua, the distance is sixty-four kilometers, and the principal rivers which cross this tract are El Pizote, Papalusco, Guacolito, Zapote, Caño Negro and Rio Frio. The Rio Frio is of considerable magnitude, and with its many branches drains a large area of the territory lying on the slopes of the volcanoes of Miravalles and Tenorio. It pours much sedimentary matter into Lake Nicaragua, and has thrown an extensive mudbank across the lake entrance to the River San Juan.

For three or four miles above the mouth of the River Frio the lands are low and swampy. Several of its branches can be reached and navigated by canoe, and even a small river steamer can ascend a few miles from the lake.

The San Carlos River joins the San Juan sixty-five miles from Lake Nicaragua. The depth of its mouth, which is obstructed by a sand-bar, varies from eight to twenty feet, according to the season.

The San Carlos has numerous affluents which at times have a volume of water altogether disproportionate to their lengths. The distance up to the first rapid of the San Carlos River, which is at El Muelle de San Rafael where there are from four to six feet of water, is roughly fixed at sixty-two

miles by the course of the river. Small steamers could reach this point, although with difficulty on account of many snags. The floods sometimes rise to their full height in twenty-four hours and carry with them a great number of trees and much sand, from which floating islands are formed.

Should the plans of Engineer Menocal for the Nicaragua Canal be realized, the waters of the upper San Juan and the lower San Carlos would be impounded and form an arm of Lake Nicaragua, which would flood a large area in Costa Rica. The interval between the San Carlos and the River Frio is an extensive forest, covering an undulating plain with occasional low hills and watered by numerous little streams. This territory is fertile and beautiful.

The next great river, the Sarapiqui, reaches the San Juan about twenty miles east of San Carlos. It is 600 feet wide at its mouth, and has numerous affluents from the sides of the volcanoes Poas, Barba and Irazú, the principal ones being the Toro Amarilla and Sardinal from the west, and the River Sucio from the east. The river is navigable for large canoes up to its confluence with the Puerto Viejo. Its banks as high up as to the River Sucio are low. The lands are extremely fertile. El Muelle Nuevo is the head of navigation, forty-five miles from the River San Juan and sixty-six miles by the road across the mountains from San José.

From the Sarapiqui River to the River Colorado, a branch or bayou of the San Juan, the banks of the latter in Costa Rica are but slightly elevated. The lands are low and swampy, but occasionally a hill is found from fifteen to eighteen feet high.

Below the Machuca Rapids the San Juan River is broad and deep as far as the junction with its Colorado outlet, about seventeen miles from the sea. Here it turns about nine-tenths of its volume of water into the Colorado. It is navigable for river steamers at all seasons, but has a dangerous bar at its mouth where the sea breaks heavily, and on which there are only from eight to nine feet of water.

From the Colorado Junction to Greytown, some twenty miles distant, the San Juan averages about three hundred

feet in width for sixteen miles and 100 feet for the remaining four, with a depth at high water of from six to eight feet.

The Colorado has several islands in its course, but has excellent anchorage at its mouth. This river forms several lagoons which communicate with each other by caños or bayous perfectly navigable, the principal being the Agua Dulce, a short distance from the sea, eleven miles in length, 800 feet in width and from ten to forty feet in depth.

Passing from the difficult Caño de la Palma in the midst of swamps, the Caño de Tortuguero is reached, the entrance to which from the sea is called Cuatro Esquinas. It is approximately thirty-eight miles long, about one thousand feet in width, with a depth of from fifty to sixty feet. The rivers Palacio and Penetencia, navigable for boats, empty into this caño. The River Tortuguero, which gives name to the plains watered by its affluents, is formed from several of these caños, as the Caño Desenredo, Caño Agua Fria and Caño de la Lomas. The Caño de Tortuguero communicates with the Parismina by the caños California and Francisco Moria Soto, which are also navigable. The margins of the Parismina are swampy. It has as its affluents the Guasimo, Camaron, Novillos and the Destierro.

The lower district drained by the Tortuguero is raised but little above the ocean, and in flood time the river communicates by several caños with the Matina and with the delta of the Colorado, as well as with the lagoon of Caiman, lying south of the Colorado. Its numerous upper streams rise in the spurs of Irazú and Turrialba.

The Sierpe and Parismina rivers flow into the sea south of Tortuguero. The former is short, but the Parismina with its several branches is a child of Irazú. Its lower course is sometimes considered to be a part of the River Reventazon, which however has its confluence with the former a few miles from the sea.

The Reventazon River has carved its way to a profound depth around the south and southeastern bases of Irazú and Turrialba, and, flanking the latter volcano, it turns northward to join the Parismina. It receives many tributaries from the northern slope of the Talamanca range, and interweaves its

head waters with those of the Rio Grande de Tarcolles and the Rio Grande de Pirris, which flow into the Pacific Ocean.

The Pacuare River, once known as Suerre, enters the sea about half way between the mouth of the Reventazon and that of the Matina. Its waters, in 1630, instead of flowing to the sea, joined the Reventazon, closing the port of Suerre, but in 1651 Governor Salinas closed the northern channel, deflecting its waters and restoring the port.

The Matina River is a short stream with a large volume of water, which enters the sea just north of Port Limon near the roadstead of Moin, where, up to 1880, ocean craft anchored. The River Matina is navigable by small steamers over the bar and by large ones above the bar to the point where it receives its principal affluents, the Chirripo, Barbilla and Zent. It yearly overflows its lower valley, depositing an inch or two of exceedingly fertile mud highly appreciated by the banana planters.

The entire mainland of the coast, from the River Colorado to the Matina, is separated from the Caribbean Sea by a continuous narrow sand bank, between which and the mainland is a lagoon, said to be navigable the whole distance by boats. The intermediate rivers pour into this narrow lagoon, driving their currents across it, and, cutting through the sand bank, enter the sea. Sometimes a violent gale closes one of the openings, which are all shallow, but the river again forces an exit to the ocean through the obstruction. This whole coast for sixty-five miles, is forbidding and dangerous, and has but little depth of water within a mile of the shore, upon which a monotonous, heavy surf breaks during the entire year. It is only frequented from April until August by fishermen, who find their way to the River San Juan through the intricate system of rivers and caños described.

Port Limon, in latitude 10° north and longitude $83^{\circ} 3' 13''$ west from Greenwich, is the only port of entry of Costa Rica on the Caribbean Sea. The first house was built there in 1871. The harbor faces the south, and is formed by a little peninsula on which Limon is situated. It is behind a narrow coral reef. The site, which now has perhaps 3500 to 4000 population, is being raised with earth about four

feet, and its port will become one of the smoothest of the Caribbean Sea. A small island, called Uvita, lies east at a distance of 3660 feet from the town. Port Limon has a wooden pier 930 feet long, accommodating two sea-going ships, but an iron pier is about to replace it, which will berth four large ones of deep draught.

The Talamanca coast lying south of Limon is low, flat and swampy, except where it is broken by hills. The little River Banana is the first one met with going south, and its valleys produce large quantities of timber and bananas. Next comes the Estrella, also a short stream; then follows the Teliri, called in its lower course the Sicsola. It is the largest stream in Costa Rica south of Port Limon. It runs along the southern base of the great eastern mountains of the Talamanca range, through a spacious, undulating, wooded valley of 100 to 150 square miles area, partly low grounds, in some places dry and in others swampy. It has several branches, like the Uren coming from the slopes of the Pico Blanco, the Supurio and others. At the entry of the high valleys of the Teliri and Coen rivers, the pyramid-like mountains of Nefomin and Nenfiobete appear, at the foot of which the interior plain of Talamanca, fifteen kilometers in length and eight kilometers in width, extends from southwest to northeast, and so uniformly that the water courses run indifferently and frequently change their beds.

Southward of Sicsola is the Tilorio or Changuinola, which makes a turbulent way to the sea from the Talamanca mountains. Along its lower margin mud flats spread to a great width, and, from its mouth towards the northwest, cover a region which surrounds also the lagoon of Sansan, and extends up the rivers Zhorquin and Sicsola. Behind the muddy zone the lands rise rapidly into hills, which in a few miles reach an altitude of several thousand feet, at times intermingling with the Cordillera. Along the entire sea margin of Talamanca runs a narrow sand belt of firm land, at times not a hundred feet wide, like that described between the Matina and San Juan rivers.

Within this sandbelt are long, narrow, deep lagoons filled with half-stagnant water from the mud flats. These

lagoons usually open into the rivers which descend from the mountains.

Between the Sicsola and the Tilorio lies the already mentioned, crooked and deep lagoon called the Laguna de Sansan.

At Limon, Cahuita and Puerto Viejo, the hills, which are connected by spurs with the more elevated country of the interior, extend to the ocean coast. Between them, in plains extending from one to five miles inland, are forest-covered swamps, overflowed with not less than ten feet of water in the rainy season and only traversable in the dry.

Costa Rica claims sovereignty on the Atlantic side southeast as far as the Island of Escudo de Veragua, including the ancient Ducado de Veragua, whose frontier follows the coast of Chiriqui Viejo to the crest of the Cordillera, and crosses it to the headwaters of the River Calobebora, then down this stream to the Escudo de Veragua.

Since their independence Colombia and Costa Rica have been in dispute in regard to their boundary line. Colombia has never ceased to claim jurisdiction over the entire Caribbean coast of Costa Rica, and even over that of Nicaragua as far north as Cape Gracias á Dios. In November, 1896, both governments signed a convention submitting their dispute to the arbitration of the President of the French Republic, or, in the event of his failure to act, to the President of Mexico or of the Swiss Confederation.

The principal lakes of Costa Rica are the Laguna Manatí, northwest from the Sarapiqui River; the Lagunas de Poas and de Barba, each on a volcano bearing its name; Lagunas de Sansan and Samay, towards the east and near the Sicsola River, in Talamanca; Laguna Tenorio, in Guanacaste; Laguna San Carlos, in the plains of San Carlos; Laguna de Arenal, between Las Cañas and San Carlos, and Laguna de Sierpe, in the south, northward from the Golfo Dulce.

Far away from Costa Rica, in the Pacific Ocean, lies the Cocos Island, about two hundred and sixty-six miles to the southwest of the Golfo Dulce, in N. latitude $5^{\circ} 32' 57''$ and longitude $86^{\circ} 58' 25''$ W. of Greenwich. Its highest point reaches 2250 feet, whence the descent is gradual to a bold,

steep coast, which has many irregularities and rocks and a surf-beaten shore. Chatham Bay is its best harbor, having room for a dozen ships. The interior is broken into numerous fertile valleys, but there is probably not a square kilometer of level ground in the entire island. Other islands are Chira, Venado, San Lucas, Caño, etc.

Mineral Wealth.—In regard to the mineral wealth of Costa Rica, petroleum has been discovered near Uruchiko on the Talamanca coast, and coal in certain sandstone formations on both the Atlantic and Pacific sides of the Talamanca section.

In the province of Alajuela, a little to the north of the cart road which runs from San José to Puentarenas, is Monte Aguacate, part of an old mountain range which extends far to the northwest, and not very distant from the Gulf of Nicoya. In general, it is of metamorphic formation, principally of diorite and porphyry.

Here, in a good climate, at 2000 feet elevation, are found auriferous veins of great richness. They are of quartz mixed with decomposed feldspathic rocks, and have yielded very lucrative bonanzas. The first mine was Guapinol, one bonanza of which produced \$1,000,000. Several other mines were worked, from one of which (Los Castros) \$2,000,000 were taken in a few years. It is estimated, from the best data obtainable, that about £1,000,000 have been taken from Monte Aguacate. Several of these veins are from six to seven feet wide, but that called the Quebrada Honda is sixteen feet wide. Most of the ore is of a high grade and of refractory character. It is probable that the whole southwestern slope of the Guatusos and Miravalles ranges of mountains is auriferous. The rocks in the northwestern extension of this district consist principally of feldspar, porphyry, basalt and dolorite.

The gold veins nearly all run northeast and southwest, and are encased in feldspar, sometimes in porphyry, and occasionally in basalt. They consist, in great part, of crystalline quartz, and are from two to forty feet wide. Professor Pittier also found gold in the slopes of the Buena Vista mountain. Gold is further found in the Talamanca mountains, especially

in the placer grounds of the Duedi River, and on the inferior hills between the Lari and Coen rivers.

Along the latter, and near Akbeta, also on the shore of Puerto Viejo, iron exists.

Copper and silver, Professor Pittier says, have been discovered in Diquis, between Paso Real and Lagarto, and native copper in Puriscal. Other mines are included in the following table:

The Principal Mines Registered in 1892.

Name of Mine.	Canton.	Location	Product.
La Trinidad	Esparza .	Rio Ciruelitas	Gold and silver ores.
La Union	Puntarenas	Shores of Rio Seco . . .	" "
Sacrafamilia	Alajuela .	Monte de Aguacate . . .	" "
La Minita	"	" "	" "
Mina de los Castros . .	"	Corralillo	" "
San Rafael	"	"	" "
Mina de los Oreamuno .	"	"	" "
Quebrada Honda	"	Quebrada Honda	" "
Machuca	"	Corralillo	" "
Trinidad de Aguacate .	"	"	" "
Peña Grande	San Ramon	Cerro de San Ramon . . .	" "
Mina de Acosta	"	Shores of Rio Jesus . . .	" "
Palmares	"	Cordillera de Aguacate .	Gold, silver and lead ores.
Las Concavas	Cartago .	Rio de Agua Caliente .	Copper ore.
Mancuerna	Sardinal .	Sardinal	"
Mata Palo	"	"	"
Puerta de Palacio . . .	"	"	"
Hoja Chiques	"	"	"
Chapernal	"	"	"

It should be stated that, with the exception of gold and some silver, little is mined. The deposits of coal, petroleum, copper and silver have thus far yielded, under present methods of management, outputs of no commercial value.

However, anthracite is found at Santa Maria Dota, Department of Puriscal. A specimen of it, analyzed by Dr. L. J. Mátos, chief of the laboratories of the Philadelphia Commercial Museum, gave these results:

It is a good quality of anthracite coal and compares very favorably with the best grades that are mined in Pennsylvania. Color, black; slight tendency to show irridescence; fracture, conchoidal, brittle; analysis, specific gravity, 1,343; weight per cubic foot, 83.93 pounds.

Proximate composition:

Moisture	2.60	per cent.
Volatile matter	3.56	"
Fixed carbon	88.20	"
Ash	5.64	"
<hr/>		
Total	100	"
Sulphur . . . . .	.4319	"
Coke	93.84	"
Coke per ton of coal	2002.01	pounds.
Fuel value	9.14	"
Fuel ratio	1:24.77	

There are to be mentioned also some mineral waters, as, for instance, those near the mouth of the Isqui River, on the Talamanca coast; those in Agua Caliente, about five miles from the City of Cartago and belonging to the Bella Vista Company; those of Orosi and Salitral, of Poas, Miravalles, Ausoles, Bagaces, San Carlos, Liberia, San Roque, etc.

II.

CLIMATE OF COSTA RICA.

The climate of Costa Rica depends on its situation in the tropics, on the position of the sun at different times of the year, and on the topography, but, owing to the narrowness of the country and its situation between the two great oceans, it is well-tempered by the alisios (northeast trades) and other winds.

I begin this chapter with the following table which gives the

Meteorological Conditions in San José During the Year 1896.

	Temperature in C. ^o			Evapora-	Humidity.	Atm'sph'ic Pressure.
	Max.	Min.	Average.	Average.	Average.	Average in mm.
January . . .	28.5	10.8	18.60	26.97	78	665.86
February . . .	31.8	10.5	19.24	33.97	74	665.39
March	32.4	12.2	19.84	42.77	70	665.38
April	28.4	14.8	20.13	19.65	84	664.87
May	29.2	15.8	20.10	19.84	83	665.32
June	28.8	14.9	20.32	18.67	84	665.09
July	29.2	15.8	20.10	19.84	83	665.32
August	29.2	14.7	20.17	22.81	82	664.38
September . .	26.6	14.4	19.97	17.87	85	664.83
October . . .	28.4	14.8	20.13	19.65	84	664.87
November . .	29.0	14.2	19.78	19.93	84	664.70
December . .	27.7	11.9	19.30	25.29	80	665.36
Average . .	28.71	13.73	19.81	23.94	81	665.21

First Half of 1897.

	Temperature in C. ^o			Evapora-	Humidity.	Atm'sph'ic Pressure.
	Max.	Min.	Average.	Average.	Average.	Average in mm.
January	29.5	13.1	19.25	30.77	78	665.53
February	31.9	8.2	19.78	44.89	70	666.52
March	31.7	10.9	20.51	36.68	72	665.70
April	32.7	12.2	21.02	36.80	74	665.59
May	30.3	14.0	20.52	24.29	82	665.52
June	29.3	15.5	20.40	16.40	85	665.32

The average atmospheric pressure of San José, the capital of the country, is 665.21 mm. The maximum occurs regularly during the months from October to March inclusive, at nine o'clock a. m., and during the rest of the year at eleven o'clock p. m. The minimum occurs always in the afternoon at four o'clock during the first eight months of the year, and at three o'clock during the last four months.

The prevailing wind is from the northeast, or, better, north-northeast and east. During August, September and October an increase of the northwest winds causes the heavy rains of that season. West-northwest and northwest winds blow also from May to August.

The daily variation of winds is generally as follows:

At seven a. m. the most frequent winds blow from S. E., to N. E.; at ten o'clock a. m. from E. to N. N. E.; at one o'clock and at four o'clock p. m. from E. N. E. to N.; from seven o'clock p. m. the movement is retrograde. The velocity is least from seven to ten o'clock a. m., and most from one to four o'clock p. m.

In 1889, during the time of observations at San José, there were noted 13 hours of north winds, 186 N. N. E., 571 N. E., 227 E. N. E., 93 E., 58 E. S. E., 25 S. E., 6 S. S. E., S. none, S. S. W. none, 1 S. W., 3 W. S. W., 4 W., 83 W. N. W.

The number of calms is small. The wind is nearly always moderate, but during the dry season the dust whirled up in the cities is very disagreeable. The climate of the uplands is an eternal spring.

The coldest month is January; December and February are relatively cold. The hottest months are May and June. The heat is, at all times, moderate and agreeable. The course of the temperature has all the characters of an insular climate, without having so much humidity. The oscillation of the average temperature is greatest in March and during the dry season, as at that time the sky is clear and the soil exposed to uninterrupted insolation during the day, while the earth's radiation of heat during the night is rapid. Also the daily oscillation is considerable during the dry season, and continues during the first month of the rainy season, according to the condition of the sky.

In 1890 the sun shone in San José 1911 hours, that is an average of five hours and fourteen minutes per day. February is the month of most sunshine and least nebulosity. The hour of most sunshine during the year is that between eight and nine a. m., and that of the least is in the afternoon.

The oscillation of the temperature of the soil is, at a depth of one meter, 2, 13° C., per year. At a depth of three meters, the temperature of the soil is lowest in February and March, when it is 20, 48° C., and highest in August, when it is 20, 75° C.

The daily variation is almost nothing during the first three months of the year, and the sky is relatively clear, while, from May to October, not one day is clear. During the hottest hours of the day the sky begins regularly to be darkened by clouds, due to ascending atmospheric currents.

In San José the sky is ordinarily clear between midnight and noon, even during the most rainy months, and cloudy the rest of the twenty-four hours. Although the rainfalls are abundant here from May to October, with rare exceptions they do not last more than a few hours each day. The mornings are generally splendid and the air very pure, and nearly every day the sunset can be clearly observed.

From May to November there are about two hours of copious rain daily between one and four o'clock in the afternoon, averaging, with great regularity, from ten to twelve inches a month, and from seventy to eighty inches during the year. Towards the end of June there is a short dry period called "Veranillo de San Juan."

Through the Desengaño and Palma Passes the northern rains penetrate a short distance every day, and the northern descent of the Palma towards Carillo is probably the most rainy district of the Republic.

At Tres Ríos, having an elevation of 4140 feet, six miles east of San José, at the western foot of the Ochomogo Pass, the rain record for 126 days out of ten months showed a fall of 100 inches, while at San José, during the same period of ten months there were 147 rainy days, with a fall of eighty-four inches. In the month of May Professor Pittier, to whom we owe these excellent data, measured nine inches in rainfall in one and one-half hours.

Rainfall in 1896 at Stations of Costa Rica of Different Altitudes, by Days and Precipitation in Mm.

The daily curve of rainfall shows a minimum very accentuated in the first half of the day. Rain begins to fall about eleven o'clock, and continues to augment rapidly from hour to hour until it reaches its maximum between four and five o'clock p. m.; from this time on it diminishes gradually until morning. The daily maximum of rain is reached about sunset, although in January the heaviest rainfalls are observed between one and two o'clock p. m. The most probable hour of rain is between four and five o'clock p. m. It seldom rains between three and four o'clock, and very seldom during the morning hours.

Thunderstorms reach their maximum in May. The relative humidity of the air is such that the climate can be considered a favored one. Its annual curve shows three minima and three maxima. The minima are observed between February and March, in July, and between November and December; the maxima in June, September and December. These lines, of course, are parallel with those indicating the distribution of rain. The maximum is noted at sunrise, the minimum at two o'clock p. m., with an average oscillation of twenty-four per cent.

From 1866 to 1880, the rain gauge record kept by Mason at San José shows a yearly average precipitation of sixty-four and one-fourth inches, or 1631 millimeters.

It is as follows:

The Rainfall in San José from 1866 to 1880 in Mm.

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
1866	33	7	—	20	139	123	320	156	274	250	171	122	1619
1867	98	56	7	98	209	206	214	190	314	213	244	14	1397
1868	—	—	181	13	83	150	102	130	224	39	144	17	1436
1869	7	—	7	28	202	218	150	132	393	281	78	102	1562
1870	1	6	31	17	333	276	240	284	240	267	184	33	1905
1871	28	3	8	13	290	203	304	307	245	33	114	11	1925
1872	3	3	15	50	244	255	192	378	397	504	142	21	2197
1873	64	—	3	71	64	205	145	85	387	262	121	11	1418
1874	46	1	20	60	336	167	162	181	319	191	42	20	1543
1875	—	—	—	28	252	180	93	294	279	339	21	32	1492
1876	14	—	11	6	247	237	153	192	206	117	70	28	1282
1877	14	—	—	—	240	167	223	159	259	95	121	79	1357
1878	—	—	38	50	142	187	205	149	329	238	223	20	1580
1879	13	—	45	192	220	330	460	283	351	231	61	8	2193
1880	8	—	—	15	254	210	104	436	165	278	92	—	1562
Average	22	5	24	44	217	268	208	222	299	266	122	35	1631

There is every year a number of slight earthquakes in San José, generally undulating from west to west-northwest, and occurring mostly between eleven p. m. and six a. m. The greatest number are observed at the beginning of the rainy season.

The rainy season on the Caribbean slope of the country does not correspond to that of the Pacific. In fact there are no continuously dry months, and on the northern declivities of the volcanoes of Turrialba, Irazú, Barba and Poas, it rains more or less during the entire year; also near Lake Nicaragua it rains nearly continuously, and the mountains of the Guatuso country and the surroundings of the volcano of Orosi are seldom without clouds. At times there are cloud-bursts of tremendous power, broadening rivers for miles. Port Limon is said to have an annual rainfall of eighty-nine inches, but it is greatly exceeded by that of Colon, which averages 120 inches. The mean rainfall at Greytown for 1890, 1891, 1892, was 267 inches yearly. The late United States Commission estimated the average at Lake Nicaragua at eighty inches, and in the basin of the San Juan River at 150 inches.

The climate of Talamanca is for the same reason very unhealthy in the proximity of the coast, and also in the lower course of the rivers a similarly deadly climate prevails. In normal years there are two dry and two wet seasons. The rains commence regularly in May or June and last until the end of July. The months of August and September are more or less dry. In October there are some heavy showers, and extensive rains begin which characterize the months of November, December and January. The driest months are February, March and April. The high region is extremely humid, giving rise to fogs and rains. The mosses which almost completely envelop the stems of the trees are constantly dropping water, and the rivers in this section are almost impassable.

The climate of the great valley of the Rio Grande de Terraba is similar to that described for the terrace lands. Both regions have distinctly marked characters. Rains begin in April, grow heavier towards September, and cease about the

end of November. During the rest of the year dry weather prevails, although sometimes heavy showers relieve this arid condition. In the lower zone pronounced radiation causes a heavy dew and extensive fogs, and both are characteristic of this section.

The excessive heat felt on the lowlands diminishes gradually with the rising of the land towards the high mountains, but at times a height of 1500 feet will be found cooler than one of 3000 feet. In the Santa Clara district, for instance, it is cooler at 500 feet elevation than it is in the Reventazon valley at 1500 feet. In general, the torrid lands of the country, ranging from the sea to 150 feet above it, and, if not clear and well-drained, even up to 400 and 500 feet, abound in malarial fevers; but as high ground, having an elevation of from 1500 to 3000 feet is reached, the fevers are of light type and not dangerous, while from 3000 to 5000 feet the diseases are those of the temperate zone, and are due less to local conditions of soil and climate than to personal neglect.

There were no epidemic diseases in 1897. In October 30, 1894, sixteen medical districts were established by law, and so were a number of hospitals and quarantine stations in the ports of the Republic.

III.

CHARACTER OF VEGETATION.

This chapter I begin with a phyto-geographical classification given by Dr. Carl Hoffman and published in *Bonplandia* in 1858. He distinguishes:

- First.—Coast regions (sea shores and salt swamps).
- Second.—Regions of tropical forests and savannas, stretching from the coast regions to a height of 900 meters.
- Third.—Regions of high plains, lying between 900 to 1500 meters of elevation.
- Fourth.—Region of upper tropical forests, situated between 1500 to 2150 meters of altitude.
- Fifth.—Region of oaks, from 2150 to 2750 meters in height.
- Sixth.—Region of chaparrales, from 2750 to 3050 meters up.
- Seventh.—Region of subalpine or subandine flora, from 3050 meters up to the tops of the high mountains.

Dr. Polakowsky enumerates cultivated lands, virgin forests, open forests and savannas.

Another division is given by Dr. Moritz Wagner. He mentions a literal zone, a tropical forest zone and a zone of savannas.

He also distinguishes on the volcano of Chiriqui the following successive regions:

- First.—Regions of evergreen forest trees and palms, bananas, *Araceæ*, etc., to a height of 550 meters, with an average temperature of 26° to 24° C.
- Second.—Region of tree ferns and mountain orchids, from 550 to 1220 meters, with an average temperature of 23° to 18° C.
- Third.—Region of *Rosaceæ*, *Senecionodeæ*, *Gramineæ* and *Agave americana*, from 1220 to 1585 meters.
- Fourth.—Region of *Cupuliferæ* and *Betulaceæ*, mostly oaks and alders, from 1585 to 3050 meters.
- Fifth.—Higher region above 3050 meters.

Dr. Wagner calls special attention to a noted uniformity of the flora on the coasts of both oceans, and Professor Pittier affirms that the vegetation between Colon and Greytown on one side, and between Panama and San Juan del Sur on the other side, is remarkably uniform. The litoral zone has a width of about four maritime miles. The predominating flora is composed of *Rhizophora* 'mangle', *Hippomane mancinella*, *Cocos nucifera*, *Chrysobalanus icaco*, *Crescentia cujete*, *Acacia spadicigera*, *Cæsalpinia bonducella* and other *Leguminosæ*; *Acrostichum aureum*, *Ipomœa pes-caprae*, *Avicennia nitida*, *Uniola Pittieri* and also *Euphorbiaceæ*, etc.

The zone of tropical forests shows, especially on the Atlantic side behind the coast region, a strip of from twenty to twenty-two miles in width, with lofty trees of *Rubiaceæ*, *Myrtaceæ*, *Melastomaceæ*, *Sterculiaceæ*, *Euphorbiaceæ*, *Meliaceæ*, *Urticaceæ*, *Moraceæ*, *Anacardiaceæ*, *Sapindaceæ*, *Leguminosæ* and *Palmae*. It is relatively free from ligneous undergrowth, having more monocotyledonous plants, such as *Cycadeæ*, *Scitamineæ*, *Cannaceæ*, *Marantaceæ*, *Cyperaceæ*, *Filices* and *Bromeliaceæ*, underneath. The latter orders figure, also with *Orchideæ* and *Loranthaceæ* among the epiphytes and parasites which cover the trees. Among the most characteristic plants of this region we name the coyol palm (*Acrocomia*), corozo (*Attalea cohune*), biscoyol (*Bactris horrida*), palmiche (*Elæis melanococca*) and *Raphia nicaraguensis* which forms almost forests along the River San Juan; further, *Tecoma pentaphylla*, *Bombax ceiba*, *Eriodendron*, *Spondias*, *Croton gossypifolius*, *Hymenæa courbaril*, rubber trees (*Castilloa costaricensis* and *C. elastica*), *Geoffræa superba*, *Simaba cedron*, species of *Enterolobium*, *Cæsalpinia*, *Liquidambar*, *Copaifera*, *Cedrela*, *Swietenia*, *Sapota*, *Pithecellobium*, *Palicourea*, *Cinchona*, *Piper*, *Ficus*, *Cecropia*; still further, smilax, vanilla, etc., Many of these characteristic plants are largely social, such as the piper, ferns, palms and others.

Moritz Wagner states that all along the southern limits of Costa Rica a likeness of climatic and geological conditions gives to the vegetation a nearly uniform character, while further northward a notable contrast is observed between the Atlantic and Pacific slopes of the mountain groups

and on the interior terrace lands. The Atlantic slope, with more constant humidity of air, is characterized by vast, dense, evergreen, virgin forests, while the Pacific lands, with a relatively dry climate and rainless summer, present more open forests and savannas, with many deciduous trees and shrubs. However, deep river valleys and some slopes near the watershed have dense, evergreen forests, and their vegetation does not differ much from that of the Atlantic slope. The flora of the high terrace lands has been so altered by thorough cultivation as to have almost lost its original character.

The Atlantic virgin forests, as well as those in the region of the San Juan River and of Lake Nicaragua, which comprise two-thirds of Costa Rican territory, show such a dense vegetation that its interior can be penetrated almost only by way of the rivers, and its general character and its enormous extension be studied only from high mountains. Owing to the very mountainous character of the country, over half of its area lies between 900 and 2100 meters above the sea, and is almost wholly covered with virgin forest. This forest here and there ascends still higher, reaching the upper limit of the oak region about 2700 meters above the sea.

Dr. Polakowsky, in an interesting publication entitled "Flora of Costa Rica," calls the forest region of the San Juan River, in view of its luxuriant character, "The Central American Hylæa," and this name Professor Pittier applies also to the entire Atlantic region, attributing to it a distinctly South American character.

The zone of the open forests and savannas, which has park-like features, is rarely found away from the Pacific side, where it forms a belt from sixteen to eighteen miles in width, interspersed with more densely forested river valleys, islands of higher and thicker virgin forests, isolated trees or groups of trees, sometimes also with *catingas* and meadows flecked with shrubs and matorrales.

The savannas and open forests spread to a considerable extent over Guanacaste, where they are a continuation of those of Rivas in Nicaragua; also over the plains of Terraba, especially in the region of Buenos Aires and Terraba; and over the coast-lands of Golfo Dulce. There are some

small similar tracts near Alajuela, Turrialba, Santa Clara and at some other points, as well as catingas and *paramos* in the high mountain ridges of the south. The *paramos* are found on poor soil and have a vegetation more herbaceous than ligneous, which, when moist, takes on the character of turf.

The trees of the savannas are generally of little height, excepting the *Enterolobium cyclocarpum* (the guanacaste), the pochote and ceiba. The grass lands are almost wholly composed of *Gramineæ* and *Cyperaceæ*, especially in the savannas of Guanacaste. The most characteristic plants are *Digitaria marginata* and *Paspalum notatum*, besides species of *Setaria*, *Panicum*, *Eragrostis*, *Andropogon*, *Isolepis*, *Cyperus*, *Rhynchospora* and *Scleria*, as well as of ferns (*Pteris aquilina*) and *Schizæa occidentalis*.

Other abundant plants in the open forests and savannas are *Compositæ* (*Zemenia*, *Pectis*, *Spilanthes*); *Rubiaceæ* (*Spermacoce*); *Polygalaceæ*; *Iridaceæ*; *Moraceæ* (*Maclura*, *Ficus*); *Melastomaceæ* (*Miconia*, *Clidemia*, *Conostegia*, *Leandra*); *Cyperaceæ*; *Convolvulaceæ*; *Euphorbiaceæ*; *Bombacaceæ*; *Sauvagesia*. Further, *Myrtaceæ* (*Psidium*, *Alibertia edulis*); *Curatella americana* (chamico); *Roupala* (danto hedliondo); *Byrsonima crassifolia* (nance); *Miconia argentea* DC. (santa maria); guacimo macho (*Luhea*), guacimo de ternero (*Guazuma ulmifolia*); burio (*Bombax apeiba*); ñambar (*Cocobola*); *Davilla lucida*; *Duranta Plumieri*; *Proteaceæ*; and *Acacia scleroxyla*, *Lonchocarpus atropurpureus*, *Dalbergia* and many other *Leguminosæ*, especially *Mimosa pudica*, which gives large tracts in many places a special character, and still more so as, being often very abundant and the plants tangled together, a general movement all around is caused when one is touched.

Among the epiphytes and parasites may be mentioned small ferns, *Peperomia*, *Epidendrum*, *Loranthus*, *Aroideæ*, *Tillandsia* and other *Bromeliaceæ*, mosses, lichens, etc.

Professor Pittier attributes to this flora of the Pacific slope a more northern origin.

During the dry season the vegetation of the savannas almost disappears, the greater part of the trees and bushes shed their leaves and herbs become dry and brittle. Only

along the rivers is some freshness observable. Toward the border of Nicaragua cacti appear, mostly species of *Cereus*, *Opuntia*, *Phyphalis* and *Mammilaria*. Professor Pittier also mentions an oak forest of *Quercus citrifolia* between Liberia and the Rio de los Ahogados, at a height of about one hundred meters above the sea. The peninsula of Nicoya is noted for a large lumber industry among its different cedars (*Cedro dulce*, *C. amargo*, *C. real*, etc.), mora and other trees. Towards the upper limits of the Atlantic tropical forests, below the oak region, *Chamædorea*, *Geonoma*, *Bactris*, *Euterpe longipetiolata* and other palms of the same groups, as well as *Gulielma utilis* (the pijivalle palm) and *Carludovica microphylla* are seen in great abundance, mixed with tree-ferns like *Alsophylla pruinata*, *Hemitelia horrida*, *Hemitelia grandifolia*, etc. Higher up appears the region of oaks, principally *Quercus retusa*, *Quercus granulata*, *Quercus citrifolia* and *Quercus costaricensis*, with *Buddleia alpina*, *Rubus*, *Lupinus*, etc. Here is also the region of the common potato. This oak region slopes gradually down from east to west. The vegetation on the summits of the high mountains of Costa Rica is of a marked subalpine character, having a great number of northern genera, as *Vaccinium*, *Pernettya*, *Alchemilla*, *Cardamine*, *Calceolaria*, *Spiræa*, etc.

Certain types of vegetation are often more due to the sterile nature of the soil than to elevation.

Although a northern flora is frequent on the high terraces of San José and Cartago, that character is not general because of the introduction of cultivated tropical and other plants peculiar to Costa Rica.

On the southern high mountains two species of *Podocarpus* (*P. taxifolia* and *P. salicifolia*), one of *Alnus* (*Alnus Mirbelii* Spach.) and one of *Weinmannia* occur quite generally among the oak forests. Other distinct floral groups are represented by the vegetation along roads and fences, on potreros, in cultivated regions and along river shores. The latter especially are rich in herbaceous plants, grasses, bushes and woods of *Bignoniaceæ*, *Myrtaceæ*, *Euphorbiaceæ*, *Mimosæ*, etc.

The potreros are characterized by *Tagetes*, *Sida*, *Hyptis*,

Solanum, *Salvia*, *Mimosa pudica* and *M. sensitiva*, etc. Along fences there grow nearly everywhere *Erythrina corallodendron*, *Yucca aloifolia*, *Bromelia pinguin*, *Agave americana*, *Cereus*, *Spondias*, *Bursera*, *Cestrum*, etc.

Prominent characteristic plants, besides the already mentioned species and genera, are the *Piperaceæ* and *Melastomaceæ*; further, species of *Iriartea*, *Bactris* and *Raphia* of the palm order, and *Alsophylla*, *Schizæa occidentalis* and *Pteris aquilina* of the ferns; still further *Castilloa costaricana*, *Gunnera insignis*, *Ochroma lagopus*, *Gliciridia*, *Inga edulis*, *Chusquea maurofernandeziana*, *Erythrina corallodendron*, *Drymis Winterii Forst.*, *Acacia Farnesiana*, etc.

The passage from one flora to another is one of insensible gradations. Cultivated lands, as already stated, do not show any longer the original vegetation.

The plants which are now mostly cultivated are: *Coffea arabica* (coffee), *Saccharum officinarum* (sugar cane), *Zea mays* (corn), *Musa paradisiaca* and *Musa sapientium* (bananas), *Phaseolus* (beans), *Oryza sativa* (rice), *Solanum tuberosum* (potato), *Nicotiana tabacum* (tobacco), *Batatas dulcis* (sweet potato), *Lycopersicum esculentum* and *Lycopersicum Humboldtii* (tomatoes), *Capsicum annuum* (chile), *Ananas sativa* (pine-apple), *Carica papaya* (papaya), *Persea gratissima* (aguacate), *Anona cherimolia* (cherimoya), *Manihot aipi* and *Manihot utilissima* (yucca or mandioca), *Indigofera anil* (indigo), *Gossypium barbadense* (cotton), *Cichorium Intybus* (chicory), *Asparagus officinalis* (asparagus), *Psidium guava* (guayaba), *Mammea americana* (mamey), *Theobroma cacao* (cacao), etc.

Before giving the lists of the woods, tannings, dyeings, gums, balsams, resins, rubber, waxes, textile and medicinal plants, oils and oil seeds, etc., of Costa Rica, it is advantageous to research to name those collectors and scientists who, having traveled through Costa Rica or established themselves there, have especially contributed to the knowledge of the natural resources of the country. They are Professor H. Pittier, A. S. Oersted, Dr. C. Hoffmann, Dr. H. Polakowsky, Dr. M. Wagner, Captain J. Donnel Smith, C. Warszewicz, Neudland, A. Tonduz, P. Biolley, Dr. A. von Frantzius, Dr.

Franc Kuntze, Professor W. M. Gabb, José C. Zeledón, Anastasio Alfaro, Juan J. Cooper, and Bishop Bernardo Augusto Thiel, D. D.

Native Names of the Woods of Costa Rica.

Acacia,	Canela or Canelon,	Cobola,
Aceituno,	Canjura,	Cocobola,
Aceituno blanco,	Cantarillo,	Cocobola ñambar,
Aguacate blanco,	Caobana,	Cocora,
Aguacatillo,	Copalillo,	Coloso,
Aguilla,	Capulin,	Comenegro de monte,
Algarroba,	Caragua,	Conchudo,
Almendro,	Carao macho,	Copal,
Alvahaquilla,	Carao silvestre,	Copalchi,
Amapola,	Carboncillo,	Copalite verde,
Amarillo,	Carbon fino,	Copulchin,
Anona colorado,	Carne,	Copulchin blanco,
Anonilla,	Caroto,	Coquito,
Anono,	Cas,	Corazon,
Arco,	Cascarillo,	Corazon de leon,
Arbol colorado,	Casco-cafe,	Cordoncillo,
Arbol de la leche,	Castaño,	Carnezuelo,
Aromo,	Castorcillo,	Corteza,
Arrayan,	Cedro amargo,	Corteza amarilla,
Asca,	Cedro blanco,	Corteza blanca,
Avellano,	Cedro caoba leon,	Corteza de venado,
Aya,	Cedro cirrus,	Corteza negra,
Aya blanco,	Cedro claro,	Cristal,
Aya colorado,	Cedro cubano,	Cristobal
Azaharillo,	Cedro dulce,	Cuajiniquil,
Azulillo.	Cedro dulce claro,	Cuascua,
Balsa,	Cedro dulce-ondulado,	Culebra,
Balsamito,	Cedro jaspeado,	Cura,
Balsamo,	Cedro macho,	Curacha.
Balsamo negro,	Cedron,	
Barillo,	Cedro naranjeña,	Damas,
Bateo,	Cedro ondulado,	Dantisco,
Berenjena,	Cedro pochote,	Danto,
Brasil moral,	Ceiba,	Danto amarillo,
Brasil negro,	Cerillo,	Danto barcino,
Brazil,	Cerro,	Danto blanco,
Brazil de clavo,	Chancho,	Danto hedliondo..
Brazil nacar,	Chaparro,	
Burio,	Cherre,	Encino roble,
Burillo.	Chaperno,	Escoba,
Cachimbo,	Chaperno amarillo,	Escobillo,
Cacique,	Chaperno blanco,	Escobo,
Cacique amarillo,	Chaperno veteado,	Esparei,
Cacique pardo,	Chavecho,	Espavel,
Caimito,	Chicha,	Espino blanco.
Camibar,	Chilamate,	
Campana,	Chile,	Flor blanca,
Campanilla,	Chilillo,	Flor de aroma,
Cañafistola,	Chirraca,	Frijolillo,
Canasto,	Cirri,	Fruta de pava,
	Clavellina,	

Fubus,	Lagartillo,	Ñambar negro,
Furru,	Lagarto,	Nance,
Fustete.	Lagarto amarillo,	Nance tricore,
	Lagarto negro,	Nancite,
Gavilan colorado,	Landal,	Nancite colorado,
Gavilan,	Lentisco,	Naranjillo,
Gavilancillo,	Lentisco oscuro,	Naranjito,
Gallinazo,	Laurel barcino,	Nispero amarillo,
Genizaro,	Laurel claro,	Nispero colorado,
Golondrino,	Laurel espino,	Nispero espino,
Guachazo negro,	Laurel negro,	Nispero negro.
Guachipilin,	Laurel oscuro,	
Guachipilin claro,	Laurel pardo,	Ocotillo,
Guachipilin oscuro,	Laurel veteado,	Ojoche,
Guachi raton,	Llema de huevo,	Olmo.
Guacimo,	Lliguatil,	
Guacimo amarillo,	Lloro,	Pacaya,
Guacimo blanco,	Lloron,	Pacaya baton,
Guacimo macho,	Lloron puire,	Palanco amarillo,
Guacimo monillo,	Lope,	Palanco nudoso,
Guacimo ternero,	Lorito.	Palma,
Guanacaste,	Madera de hierro,	Palma de mano,
Guapinol,	Madera negra,	Palma real,
Guapinol tierno,	Maderon,	Palmiche,
Guatil or Jagua,	Madroño blanca,	Palo azul,
Guavo,	Madroño corteza,	Palo de sal,
Guavo silvestre,	Madroño de comer,	Palo frio,
Guayabillo,	Makenge,	Palo jabon,
Guayabito,	Malacahuite,	Papaturro blanco,
Guayacan,	Malacahuite blanca,	Papaturro negro,
Guayacan amarillo,	Mangle,	Papayo almendro,
Guayacan de costa,	Mangle morigüite,	Papelillo,
Guayacan oscuro,	Manglero,	Paraiso,
Guayavo,	Mango,	Pastora,
Güitite.	Mano,	Pava,
	Manzana rosa,	Pava macho,
Habilla,	Manzanillo,	Pavilla veteado,
Haya,	Marañon,	Peine de mico,
Higuera,	Maria,	Pejivalle,
Hormigo,	Mario,	Piedrilla,
Huesillo,	Mastate,	Pipa or Mora blanco
Hule.	Mastatillo,	Plomillo,
	Mayo,	Pocara,
Ira,	Melon,	Pochote,
Ira amarillo,	Molenillo,	Poro cerrado,
Ira blanco,	Mora decipina,	Poroporo,
Ira bofo,	Moral blanco,	Pure
Ira colorado,	Moral leonado,	
Ira mangle,	Moral listado,	Quajiniquil,
Ira, rosa.	Moral negro,	Quiebracha colorado,
	Morante,	Quiebra hacha,
Jaboncillo,	Mora punteado,	Quina,
Jamaico,	Morate,	Quita calzon,
Jaul,	Mora tinta,	Quitirri,
Jicaro,	Muñeco,	Quizarra amarillo,
Jiñocuave,	Muñeco macho,	Quizarra baboso,
Jobo,	Murta.	Quizarra bofo,
Jorobado,		Quizarracillo,
Juaquiniquil.		Quizarra clara,

Quizarra barci	Sandalo,	Uiscoyol or Viscoyol,
Quizarra ira,	Sangre de toro,	Uruca or Teregre.
Quizarra negro,	Sangre de drago,	
Quizarra quina,	San Juan,	
Quizarra zopilote.	San Juan dulce,	
	San Juanillo,	
Ramal,	Sierrillo,	
Raspaguacal,	Siete cueros,	
Raton,	Siete cueros machos,	
Raton blanco,	Simaruba,	
Ratoncillo,	Sirri,	
Resino,	Siva,	
Roble,	Sota caballo.	
Roble angular,		
Roble de la laguna,	Tamarindo,	
Roble de sabana,	Targua,	
Roble encino,	Ticuarri,	
Ronron,	Tirra,	
Ronron veteado.	Torco,	
Sabino,	Tres huevos,	
	Tuiquisirrie.	

Native Names of the Medicinal Plants of Costa Rica.

Acedera,	Caña gigantea,	Guaco redondo (vine),
Agra,	Caña agria,	Guas molenillo,
Ajo,	Caña fistula,	Guanacaste,
Alcornoque,	Capitana,	Guapinol,
Albahaca,	Capitaneja,	Guayacan amarillo,
Alcotan,	Carao,	Guarumo,
Algabia,	Cardo santo amarillo,	Guizaro.
Algabia or Abelmoscus,	Cardo santo blanco,	
Almendro (Papayo colorado),	Chamomila,	
Almendrillo aromatico,	Cola de alacran,	
Alucema,	Contrayerba,	
Amapola,	Copal,	
Anisillo,	Copalchi,	Higuerilla,
Anona,	Copalchi guisarra,	Hanojo,
Anonillo,	Copey,	Hojasen,
Apasote,	Cordoncillo,	Hombre grande.
Apasote de mexico,	Cornezuelo,	
Artemisa.	Croton,	
	Cucanillo,	
Balsamito,	Culantrillo.	
Balsamo copal,	Doradilla.	
Balsamo negro,		
Barbasco,	Eneldo,	
Barbas ilote (Cabello de maiz),	Escoba blanca,	
Borraja.	Escorzonera,	
	Esparto.	
Cacao gigante,	Fierrito,	
Camibar,	Frutas de cornezuela.	
Campanilla blanca,		
Canchalagua,	Guacamayo,	
Canchillo,	Guachara,	
Candelillo,	Guacimo negro,	
Canela,	Guaco,	

Marañon,	Quina colorado,	TigUILote,
Matasano,	Quassia hombre grande.	Tuete.
Mejorana,		
Meloncillo,	Raiz de toro,	Uña de gato.
Michoacan,	Reina de la noche,	
Mozote de caballo.	Romero,	Valeriana,
	Ruda,	Vainilla,
Naranja,	Ruibarbo.	Velvet,
Naranja agria,		Venado,
Nuez moscada.	Sacaguacal,	Verbena,
Ojoche macho,	Sacate limon,	Vetiver,
Ojoche rojo,	Sagu,	Viborana.
Oregomo,	Salvia,	
Orosus,	Samo,	Yerba buena,
Ortiga.	Sangre de drago colo-	Yerba culebra,
	rado,	Yerba mora,
Palo leche,	Sangre de toro,	Yerba té,
Paraiso,	Sarsaparilla,	Yerba tora.
Petrona,	Sanco,	
Peine de mico,	Sensitiva,	Zacate de limon
Pichichio solano,	Simaba cedron,	Zacate de olor,
Pie de venado,	Simaruba,	Zarza,
Platanillo,	Suelda con suelda.	Zarzon,
Pochoche macho,	Tamarindo,	Zenizero,
Polipodio.	Tapate,	Zarzaparilla,
Quina,	Tarsana,	Zorrillo.

Native Names of Costa Rican Tanning and Dyeing Plants.

Name.	Commercial Part.	Use.
Achiote	Seed	Dyeing.
Aguacate	Seed	Tanning.
Añil	Extract	Dyeing.
Brazil	Wood	"
Catazin	Wood	"
Encino blanco . . .	Bark	Tanning.
Encino colorado . .	Bark	"
Gavilan	Bark	"
Guanacaste	Bark	"
Guanacaste	Fruit	Dyeing and tanning.
Mangle	Bark	" " "
Mora	Wood	Dyeing.
Nacascolo	Fruit	Dyeing and tanning.
Nancite	Bark	" " "
Ojo de venado . . .	Seed	Dyeing.
Ratoncillo	Bark	Tanning.
Sacatinta	Plant	Dyeing.
Sangre de drago . .	Sap	"
Yuquilla	Root	"

Native Names of Costa Rican Gums, Resins, Rubber, Etc.

Name.	Character.	Name.	Character.
Acacia	Gum.	Gallinazo	Gum.
Arrayan	Wax.	Guapinol	Resin.
Aroma	Gum.	Hule	Rubber.
Balsamo negro	Balsam.	Incienso	Resin.
Barillo	Resin.	Jinote	Gum-resin.
Copal, fossil amber	"	Jocote	Gum.
Copal	"	Jobo	"
Camibar	Balsam.	Jenizaro	Gum-resin.
Caraña	Resin.	Mangle	Gum.
Copaiba	Balsam.	Mastate	Milk.
Cedro	Gum.	Nispero	Chewing gum.
Cera vegetal	Wax.	Ojoche colorado . . .	Milk.
Cerillo	"	Ojoche macho . . .	"
Chilamate	Milk.	Pochote	Gum.
Chirraca	Balsam.	Quiebracha	"
Espino blanco	Gum.	Sangre de drago . . .	Sap.
Guanacaste	"	Tuno macho	Chewing gum.
Guayacan	Resin.	Palo de vaca	Milk.

Native Names of Costa Rican Oilseeds.

Almendro,	Coco,	Corozo,
Algodon,	Colza,	Cacahuete,
Ajonjoli,	Coyol,	Higuerilla,
Biscoyol,	Coquito,	Lino.

Native Names of Costa Rican Textile Plants.

Name.	Product.	Name.	Product.
Algodon	Cotton.	Limon montes	Bast
Balsa	Silk-cotton.	Luffa	Fruit.
Banana	Leaves.	Majagua	Bast.
Barrigona	Silk-cotton and bast.	Maguey	Leaves.
Burio	Bast.	Mastate	Bast.
Cabuya	Leaves	Palma	Leaves.
Ceiba	Silk-cotton.	Peine de nico	Bast.
Corteza blanca	Bast.	Pie de venado	Bast.
Coco	Fruit fibre.	Piña	Leaves.
Cucanilla	Bast.	Piñuela	Leaves.
Guarumo	Bast.	Pochote	Bast and silk-cotton.
Itavo	Leaves.	Pita	Leaves.
Juco	Bast.	Ramio	Bast.
Junco	Leaves.	Soncollo	Bast.

IV.

FAUNA.

In regard to the *fauna*, there are in Costa Rica about one hundred and twenty-one species of mammalia, of which ten are domesticated and four of *Mus* introduced, leaving 107 as indigenous to Costa Rica.

There are only a few species peculiar to Costa Rica, and also but a small number peculiar to Central America, among which are the *Tapirus dowi alston* and three species of monkeys. About one-fifth of the total number also belong to South America and one-seventh to North America. The rest are found as well in North as in South America. With respect to the avifauna, there are 725 known species. This great variety of the avifauna is due to especial climatic conditions, to the very rich flora, to the geographical position between two oceans and to the vicinity of so many islands of the Caribbean Sea.

It is composed of 67 Neoarctic species, which are also found in the north of Mexico; of 247 Neotropical or South American species, of 260 autochthonous or exclusively Central American species, and 128 newly described species which live as well in the northern as in the southern continent. The rest, comprising 23 species, have a doubtful origin. The best singing birds are the Gilguero, Yigüerro, Toledo, Mozotillo, Cacique, Mongita, Comemaiz, Setillero and Agüillo.

There are over 130 species of *Reptilia* and *Batrachia* in Costa Rica. Those known and described are 36 *Batrachia*, 28 *Lacertilia*, 60 *Ophidia* and 6 *Testudinata*. Poisonous snakes are the Toboba, Bocaracá, Oropel, Terciopelo and Cascabel.

Costa Rica is also very rich in *Fishes*. Those in the Pacific are almost entirely different from those of the Atlantic Ocean. Also its tributary waters have more varied species than those of the Atlantic slope.

In correspondence with the varied topographical, climatological, and botanical conditions of Costa Rica is also the *invertebrate fauna*. And here the National Museum, under Mr. Anastasio Alfaro, and the "Instituto fisico geografico Nacional," under Professor H. Pittier, are doing equally excellent work in bringing them to our knowledge, as they have done like service in other branches of Natural History.

The most interesting species of the fauna in Costa Rica among the mammalia are the monkeys (*Mycetes palliatus*, *Ateles geoffroyi*, and *Cebus hypoleucus*), the tigre (*Felis onca*), marrigordo (*Felis pardalis*), puma (*Felis concolor*), the coyote (*Canis latrans*), tigrillo (*Urocyon cinereo*), pisote (*Nasua narica*), martilla (*Cercoleptes caudivolvulus*), comadreja (*Mustela brasiliensis*), chulomuco or tolumuco (*Galictis barbara*), Zorro hediondo (*Conepatus mapurito*), nutria or perro de agua (*Lutra felina*), manati or vaca marina (*Trichechus australis*), danta (*Elasmognathus bairdii* and *E. Dowi*), salimo (*Dicotyles tajacú*) cari blanco (*Dicotyles labiatus*), venado (*Dorcophorus clavatus*), cabro de monte (*Mazama temama*), ardillas (*Sciurus hypopyrrhus*, *Sc. aestuans hoffmanni*, *Sc. Alfari*), puerco espino (*Synetheres mexicanus*), guatusa (*Dasyprocta isthmica*, *D. punctata*), tepeizcuintle (*Coelogenys paca*), conejo (*Lepus graysoni*, *L. gabbi*), perico ligero (*Bradypterus castaniciceps*), perezoso (*Choloepus hoffmanni*), armado de zopilote (*Dasypterus gymnurus*), armadillo (*Tatusia novemcincta*), oso hormiguero (*Myrmecophaga jubata*), oso colmeno or tejon (*Myrmecophaga tetradactyla*), serafin de platanar (*Cyclothorus didactylus*), zorro pelon (*Didelphis marsupialis aurita*), zorro isi (*Marmosa cinerea*) and zorrito de platanar (*Marmosa murina*).

Among the birds the following may be mentioned, following the enumeration of José C. Zeledón: The sensontle (*Mimus gilous*), the jilguero (*Melanops*), the yigüero (*Turdus grayi*), the picudos (*Cæreba cyanea* and *C. lucida*), the rualdo (*Chlorophonia callophrys*), the caciquita (*Euphonia*

elegantissima), the monjita fina (*Euphonia affinis*), and other species of *Euphonia*; further pipra mentalis, la viuda (*Tanagra cana*), el cardenal (*Pyranga leucoptera* and *P. rubra*), cyanospiza, sps., alcalde mayor (*Rhamphocælus*) the oropéndula (*Ocyalus waglieri* and *O. montezumæ*), the choltote or trupial (*Icterus pectoralis* and *I. giraudi*), the rajon (*Cotinga amabilis*), colibris or gorriones (*Trochilidæ*), the quetzal (*Pharomacrus costaricensis*), resplendor (*Muscivora mexicana*), the curré (*Ramphastus carinatus*), the quioro (*R. tocard*), the curré verde (*Aulacorhamphus cæruleigularis*), carpintero (*Campetherus guatemalensis* and *Centurus hoffmanni*), the lapas rojas and lapas verdes (*Ara militaris* and *Chrysotis diademata*, *C. guatemalæ* and *C. auripalliata*), the periquitos (*Conurus petzii* and *Brotogeris tovi*).

Further mention is made of the aguila (*Trasætus harpyia*), camaleon (*Falco sparverius*), carga-hueso (*Polyborus cheriway*), the rey de zopilote (*Gyparchus papa*), the zopilote (*Cathartes atrata*) and the zonchiche (*Cathartes aura*). To these may be added the tortolita (*Columbigallina passerina*), the pavon (*Crax globicera*), the pava (*Penelope cristata*), pava negra (*Chamæpetes unicolor*), the codorniz (*Ortyx leylaudi*) and chirraxua (*Denitortyx leucophrys*); still further, the martin peña (*Ardea virescens*) and other garza (*Tigrisoma cabanisi*, *Nycticorax americanus*, *Gallina aquatica*, *Euryypyga major*), zarzetas (*Numenius* and *Totanus*); also the pijijes (*Totanus flavipes* and *Charadrius vociferus*), the patillo (*Collymbus dominicus*), the piche (*Dendrocigna autumnalis*), pelicanos and alcatraz (*Pelecanus*), etc.

We have further to mention the great turtles from both oceans, the (*Nacar de perlas*) or pearl shells from Golfo Dulce and Nicoya, the oysters from Puntarenas, the purple snail (*Murex*), also sponges, corals, etc

V.

THE ABORIGINAL INHABITANTS.

Colonel George Earl Church says in regard to the Indians: "There are many indications that Costa Rica was once the debatable ground between the powerful Mexican invader and the warlike Caribs of northern South America."

"The Caribs were a tall, muscular, copper colored race who, when the New World was discovered, occupied the coast from the mouth of the River Orinoco to that of the River Amazon, and stretched inland over all the half-drowned districts and far up the valley of the Orinoco. Their nomadic spirit led them to the conquest of many of the Windward Islands, and, I am disposed to believe, urged them to invade all the countries bordering the Caribbean Sea and Gulf of Mexico having estuaries and rivers which could be penetrated by their war canoes. These carried from twenty-five to one hundred men each and were of sufficient size to make long voyages."

Along all the Caribbean coast districts of Yucatan, Honduras, Nicaragua, Costa Rica and Chiriquí, and throughout the province of Panamá, the Carib has left traces of his presence.

It is evident that an offshoot of the highland Mexican race pressed south and east from Chiapas, Mexico, into and through the long strip of the Pacific coast occupied by the Chorotegas or Mangues, followed the Pacific slope of the Cordilleras and the narrow space between Lake Nicaragua and the Ocean, penetrated into northwestern Costa Rica, settled and helped the Mangues to develop a considerable civilization in the district of Guanacaste and Nicoya, and in

part subdued all the volcanic region lying north and west of the valley of the River Reventazon.

It is notable that inhabitants of volcanic countries crowd around the slopes of its volcanoes, due probably to the fertilizing quality of the ejected ash.

The Mexicans have left abundant traces of their language in Costa Rica, especially throughout its northern half. Many of their words are now in common use and incorporated into the Spanish spoken there. Notably such words occur in the names of plants, animals and geographical localities.

In 1569 the Adelantado Peráfan de Rivera made an elaborate detailed enumeration of the Indians and found their total number to be 25,000.

Mr. M. de Peralta says the Nahuas (Aztecs) and Mangues (Chorotegas), Güetares, Viceitas, Térrabas, Changuenes, Guaymies, Quepos, Cotos and Borucas were the principal people who occupied the territory of Costa Rica at the time of the conquest. The Nahuas came from the north, and if the Mangues did not go from Chiapas, it is necessary to infer that from the Gulf of Nicoya and the shores of the lakes of Nicaragua and Managua they extended to the south of Mexico, where, up to a few years ago, their language was spoken at Acalá.

The Mangues, or Chorotegas, at the time of the Mexican invasion, occupied the peninsula of Nicoya and all the lands surrounding the gulf of that name. They were then, no doubt, the most powerful and advanced people in Costa Rica, and carried some of their arts, such as pottery, sculpture, weaving, and tilling the ground, to greater perfection than any people occupying the region between their territory and that of the Chibcas on the table-land of Colombia. In their graves are found gold ornaments and specimens of the ceramic art showing taste in design superior to any that the present civilized Costa Rican Indian can manufacture. These graves also contain beautiful specimens of obsidian, greenstone and even finely wrought jade tools and jade ornaments, knives, axes, arrowheads, amulets, rings and a multitude of stone idols, seats, etc. The Mangues appear to have manufactured gold extensively into jewelry.

The Güetares made their homes on the slopes of the Turrialba, Irazú and Barba to the southeast of the Mexicans and Chorotegas, and, in a less degree, they shared in the skill and advancement of the latter, but their pottery was inferior in artistic method and quality of material and workmanship, judging from collections in the National Museum of Costa Rica.

Peralta says, "The Nahuas and Mangues of the regions of Nicoya have completely disappeared, although the first still survive in Mexico, and the latter are represented here and there by a descendant in Masava (Nicaragua) and in Acalá (Chiapas)." The Nahuas (Aztecs) left notable monuments of their material civilization and of their scientific attainments, and a language that served as the instrument of a cultivated and thoughtful race.

During the colonial period the Spaniards, in several efforts to explore the River Frio, were driven back by the Guatuso Indians, who still occupy the greater part of its valley and the slopes of the volcanic mountains. It was not until 1856 that a small expedition penetrated across the country to the Rio Frio from the mouth of the River Arenal, a branch of the San Carlos. They reported fertile, hilly slopes in its upper reaches, and beautiful plains for most of the distance traversed to its mouth.

The rubber collectors of Nicaragua for many years have ascended the Rio Frio and other rivers in canoes and plundered the settlements, plantations and property of the Indians, forcing them to retire further up the river. The Guatusos live in *palenques* (stockades), and their houses are similar to the maloccas among Amazon tribes. Each palenque shelters several families, who cook their food at separate fires built on the ground. They live principally on plantains, yucca, maize, sugar cane, cacao, game and fish, the latter being abundant in the Rio Frio. They also cultivate and smoke tobacco.

Their weapons are bows, arrows, stone axes, and wooden knives. They drink *chicha*, made by fermenting roasted green plantains, and also *chicha mascada de maiz*. As the bishop of Costa Rica, Dr. Bernardo A. Thiel, a very noted ethnologist and archæologist, says:

"The Guatuso country is probably one of the most delightful portions of Costa Rica. Every tropical product can be grown there in abundance, for the lands are immeasurably rich and the climate one of the best in the tropical belt."

The last census of the Guatuso Indians is as follows:

Palenques.	Men.	Women.	Children.	Total.	Graves.
<i>On the river Tojifo:</i>					
Tojifo	26	12	9	47	25
Margarita	24	13	17	54	60
Pedro Joaquin	15	11	13	39	101
Sabara	8	5	7	20	18
Culolo	9	8	4	21	23
Napoleon	8	5	3	16	36
<i>On the river Cucuracha:</i>					
Juana	8	5	4	17	26
<i>On the river La Muerte:</i>					
Congo	10	3	3	16	9
La Muerte	8	3	1	12	—
<i>On the river Pataste:</i>					
San Juan	5	1	1	8	—
Grecia	11	4	2	17	—
Total	132	70	64	266	298

Of the Talamanca Indians, Professor H. Pittier distinguishes two tribes, the Brilio and Cabécar. The first live in the valleys and mountains of Urén and Arari and along the lower course of the Coen River, while the Cabécars dwell in the upper parts of the Coen. Other Indians, probably of the Tiribi tribe, live in the upper part of the Teliri valley.

The Talamanca Indians have a higher grade of civilization than the neighboring Boruca or Brunca and Térraba Indians.

The Bribribs have good traditions and numerous legends of their past.

The census of the Talamanca Indians is as follows:

	Male.	Female.	Total.	Married.
Lari	263	269	532	13
Coen	172	176	348	—
Teliri	67	71	138	2
Urén	424	393	817	44
Total	926	909	1835	59

The Térrabas and Bruncas or Boruca Indians are located on the Pacific slope of the Talamanca mountains, and especially in the great valley of the Diquis or Rio Grande de Térraba, although there are also a few Indian palenques in the neighborhood of the Chirripó. The Borucas or Bruncas are dolichocephalic. The men are large, the women short and plump. They are more intelligent and active than the Tishbi of Térraba. Professor Pittier counted in the Boruca valley and at Palma, Punta Mala and La Uvita 65 to 75 ranchos scattered around, with about 389 inhabitants, while he found 50 to 60 ranchos with about 250 inhabitants in the town of Térraba and 25 to 30 ranchos with about 300 inhabitants in the town of Buenos Aires. There are also some Indians near the Golfo Dulce.

Taken in all, about 4000 uncivilized Indians are estimated to remain in Costa Rica.

VI.

POPULATION.

The population of Costa Rica is nearly all white and mostly descendants of Spaniards from Galicia. The Indians are not numerous and are completely distinct from the civilized race. The Negroes and mixed breeds live almost exclusively on the coastlands.

The Costa Ricans are a well formed, robust and healthy people with regular features. The women are gracious, have splendid eyes and abundance of hair, and appear affable in manner. The men are intelligent, industrious, economical, honest and peaceable, as well as polite, truthful and generous. They respect order and property, love to work, and are proud of their wealth and of the independence of their nation.

Every Costa Rican owns property of some kind. The better class of women follow in their dress the fashions of Europe; the lower classes have gowns of muslin or calico, and wear petticoats, rebozos and very often panama hats. Some adorn themselves with earrings and other jewelry and some wear shoes.

The men dress in European style. The lower class, consisting of hard-working farmers, owners of small coffee-plantations and ox-carts and oxen for internal traffic, wear coarse cloth coats, drill or cotton trousers, and straw or felt hats. Most of these people go barefooted.

The houses of the wealthy have all modern conveniences. Those of the poorer classes are nearly comfortless. They are mostly low and built of adobes, with a roof of tiles, and are arranged in regular streets crossing each other at right angles. The public buildings are spacious and ornamental.

Among the principal buildings in San José are the New National Theatre, in which about 1,000,000 pesos were invested; the National Palace; the Palace of Justice; the Executive Mansion; the Episcopal Palace; the National Distillery; the Market; the University; the High School for Young Ladies; the High School for Young Men; the Custom House; the Mint, etc.

The city possesses charitable institutions, such as hospitals, orphan asylums, insane asylums, etc., all under the management of corporations and associations constantly laboring for their improvement. The cemeteries are under the supervision of charitable associations. There are several parks, a Museum, a Public Library and scientific, legal, medical, literary and musical societies, an International Club and a German Club, etc.

The streets are mostly macadamized or paved with stones and lighted by electricity. Nearly every city is well-supplied with water conducted through pipes.

The food of the poor comprises meat, beans, corn, rice, tortillas and plantains.

Saturday is the especial market day of the cities, and from sunrise till noon the market-places are crowded with sellers and buyers. Here can be found all kind of vegetables and fruits, potatoes, corn, beans, coffee, tobacco, sugar, cheese, meat and other food, besides earthenware, hammocks, hats, rebozos, charcoal, etc.

The population of Costa Rica in 1897 was calculated to be 288,769, as follows:

90,940	inhabitants in the Province of San José.
67,972	" " " Alajuela.
45,161	" " " Cartago.
37,603	" " " Heredia.
23,769	" " " Guanacaste.
8,925	" " Comarca de Limón.
14,399	" " " Puntarenas.

The last census, that of 1892, gave 243,205 as the entire population of the Republic.

The following table shows the population of the different "cantones" in 1892 and 1897:

Province of San José.

Canton.	1892.	1897.
San José	39,112	46,410
Escazú	6,522	7,735
Desamparados	6,471	7,616
Puriscal	6,845	8,092
Aserri	6,030	7,140
Mora	5,814	6,902
Tamazú	2,583	3,070
Goicoechea	3,341	3,975
Total	76,718	90,940

Province of Heredia.

Canton.	1892.	1897.
Heredia	16,480	19,635
Barba	2,964	3,522
Santo Domingo	5,118	6,069
Santa Barbara	2,845	3,379
San Rafael	4,204	4,998
Total	31,611	37,603

Province of Alajuela.

Canton.	1892.	1897.
Alajuela	19,300	22,967
San Ramon	9,928	11,781
Grecia	8,797	10,472
Atenas	6,208	7,373
San Mateo	3,353	3,986
Naranjo	6,847	8,092
Palmares	2,770	3,296
Total	57,203	67,967

Province of Guanacaste.

Canton.	1892.	1897.
Liberia	5,883	7,021
Cañas	2,165	2,570
Bagaces	1,476	1,749
Santa Cruz	5,948	7,021
Nicoya	4,577	5,438
Total	20,049	23,799

Comarca de Limón.

Canton.	1892.	1897.
Limón	7,484	8,925

Province of Cartago.

Canton.	1892.	1897.
Cartago	25,898	30,821
Paraiso	7,819	9,282
La Union	4,256	5,058
Total	37,973	45,161

Comarca de Puntarenas.

Canton.	1892.	1897.
Puntarenas	8,869	10,472
Esparta	3,298	3,927
Total	12,167	14,399

The following table shows the constant natural increase of the population, beginning with the year of 1868:

1868	131,510	1878	163,633	1888	216,65
1869	134,416	1879	167,248	1889	224,25
1870	137,387	1880	170,943	1890	232,034
1871	140,423	1881	174,720	1891	240,126
1872	143,525	1882	178,581	1892	248,500
73	146,696	1883	182,528	1893	257,155
74	149,937	1884	188,895	1894	266,122
1875	153,250	1885	195,483	1895	275,400
76	156,636	1886	202,297	1896	285,003
77	160,997	1887	209,357	1897	288,799

The population of Costa Rica prior to 1868 was as follows:

1864	120,499
1844	79,982
1835	74,565
1826	61,846
1778	24,536

Costa Rica being a country of immense resources, with great opportunities for success in industrial, agricultural and commercial enterprises, it may be interesting to know its smaller subdivisions, called *barrios* or districts, as presented in the following table, taken from the latest census, that of 1892:

Province of San José.

Canton de San José.

Barrios, etc.	Males.	Females.	Total.
Ciudad or Capital de San José.	1,941 2,713 1,758 2,853	2,243 2,544 2,095 3,179	10,061
Barrio de San Pedro	1,273	1,418	2,691
" de San Juan	1,061	1,236	2,297
" de Curridabat	957	973	1,930
" de Zapote	485	509	994
" de San Isidro	974	997	1,971
" de San Vicente	797	867	1,664
" de Alajuelita	1,428	1,416	2,844
" de San Francisco	286	276	562
" de Uurca	675	737	1,412
" de San Jeronimo	187	169	356
" de Mata Redonda	456	486	942
" de Hortillo	194	180	374
" de San Sebastian	361	434	795
" de Las Pavas	470	484	954
Total	18,869	20,243	39,112

Canton de Escazú.

Barrios, etc.	Males.	Females.	Total.
Villa de Escazú (Centro)	440	521	961
Barrio de San Antonio	741	757	1,498
" de San Rafael	835	870	1,705
" de Santa Ana	761	699	1,460
" de Salitral	475	423	898
Total	3,252	3,270	6,522

Canton de Desamparados.

Barrios, etc.	Males.	Females.	Total.
Villa de Desamparados (Centro)	556	651	1,207
Barrio de San Juan de Dios	486	512	998
" de San Miguel	479	515	994
" de San Cristobal	191	238	429
" de San Rafael	384	391	775
" de Rosario	226	205	431
" de Patarra	225	209	434
" de Los Frailes	186	215	401
" de San Antonio	385	417	802
Total	3,118	3,353	6,471

Canton de Goicoechea.

Barrios, etc.	Males.	Females.	Total.
Villa de Guadalupe (Centro)	667	702	1,369
Barrio de San Francisco	161	182	343
" de Ipsis y Purral	260	298	558
" de Blancos y San Gabriel	277	303	580
" del Charco y Rancho Redondo	146	117	263
" de Mata de Platano	103	125	228
Total	1,614	1,727	3,341

Canton de Puriscal.

Barrios, etc.	Males.	Females.	Total.
Villa del Puriscal (Centro)	597	604	1,201
Barrio de San Rafael	398	373	771
" de San Pablo	371	319	690
" de Barbacoas	245	224	469
" de Desamparaditos	234	257	491
" de San Antonio	299	299	598
" de San Juan	234	211	445
" de Grifo Alto	216	212	428
" de Grifo Bajo	176	183	359
" de Mercedes	358	316	674
" de Candelarita	366	353	719
Total	3,494	3,551	6,845

Canton de Aserri.

Barrios, etc.	Males.	Females.	Total.
Villa de Aserri (Centro)	587	652	1,239
Barrio de Monte Redondo	265	258	523
" de Pirris	49	52	101
" de San Ignacio	428	399	827
" de La Legua	189	132	321
" de Sabanillas	320	270	590
" de Cangrejal	176	170	346
" de Tarbaca	195	171	366
" de Cacao	198	199	397
" de La Ceiba	97	78	175
" de Ococa	105	90	195
" de Poas	124	125	249
" de Guaitil	251	223	474
" de Palmichal	114	113	227
Total	3,098	2,932	6,030

Canton de Mora.

Barrios, etc.	Males.	Females.	Total.
Villa de Pacaca (Centro)	435	456	891
Barrio de Los Altos y Tienfres	369	332	701
“ de Jateo	166	164	330
“ de Brasil	138	140	278
“ de Guajabo y Jaris	416	452	868
“ de Rodeo	53	53	106
“ de Morado	283	295	578
“ de Tabarcia	261	238	499
“ de Picagres	190	198	388
“ de Piedra Blanca	206	201	407
“ de Piedras Negras	388	380	768
Total	2,905	2,909	5,814

Canton de Tarrazú.

Barrios, etc.	Males.	Females.	Total.
Villa de San Marcos (Centro)	437	378	815
Barrio de San Pablo	241	230	471
“ de San Andrés	111	93	204
“ del General	149	135	284
“ de Santa Maria	432	377	809
Total	1,370	1,213	2,583

*Province of Alajuela.**Canton de Alajuela.*

Barrios, etc.	Males.	Females.	Total.
Ciudad de Alajuela (Centro)	1,750	2,078	3,828
Barrio de San Pedro	797	794	1,591
“ de San Rafael	632	733	1,365
“ de San José	741	798	1,539
“ de Santiago Este	528	538	1,066
“ “ Oeste	483	507	990
“ de Concepcion	755	784	1,539
“ de Sabanilla	734	722	1,456
“ de San Antonio	681	720	1,401
“ de Turrúcares	420	388	808
“ de Desamparados	436	455	891
“ de Tuetal	249	261	510
“ de Garita	249	254	503
“ de San Isidro	330	333	663
“ de Itiquis	279	290	569
“ de Sarapiqui	106	61	167
“ de Carrillos	196	218	414
Total	9,366	9,934	19,300

Canton de Palmares.

Barrios, etc.	Males.	Females.	Total.
Villa de Palmares (Centro)	324	417	741
Barrio de Esquipulas	280	266	546
“ de Buenos Aires	271	294	565
“ de Zaragoza	289	273	562
“ de La Granja	190	166	356
Total	1,354	1,416	2,770

Canton de San Ramon.

Barrios, etc.	Males.	Females.	Total.
Villa de San Ramon (Centro)	912	1,077	1,989
Barrio de Santiago Norte	261	249	510
" " " " Sur	621	615	1,236
" " " " de Concepcion	281	268	549
" " " " de Piedades Norte	502	486	988
" " " " Sur	544	536	1,080
" " " " de San Juan	729	733	1,462
" " " " de San Isidro	346	361	707
" " " " de San Rafael	595	622	1,217
" " " " de Los Angeles	112	78	190
Total	4,903	5,025	9,928

Canton de Grecia.

Barrios, etc.	Males.	Females.	Total.
Villa de Grecia (Centro)	663	716	1,379
Barrio de San Isidro	388	405	793
" " " " de Sarchi Norte	523	509	1,032
" " " " de Sarchi Sur	291	267	558
" " " " de Sirri	383	372	755
" " " " de Puente Piedra	293	334	627
" " " " de San Jeronimo	279	252	531
" " " " de San Roque	297	299	596
" " " " de San Pedro de la Union	190	191	381
" " " " de San Jose	393	366	759
" " " " de Tacares	265	239	504
" " " " de Los Angeles	215	198	413
" " " " de San Juan	196	186	382
" " " " de Guatuso	77	10	87
Total	4,453	4,344	8,797

Canton de Atenas.

Barrios, etc.	Males.	Females.	Total.
Villa de Atenas (Centro)	388	423	811
Barrio de Jesus	581	544	1,125
" " " " de Mercedes	432	446	878
" " " " de Santiago	254	268	522
" " " " de Concepcion	364	365	729
" " " " de San Isidro	255	232	487
" " " " de Candelaria	196	209	405
" " " " de San Jose	265	248	513
" " " " de Los Angeles	177	190	367
" " " " de Santa Eulalia	188	183	371
Total	3,100	3,108	6,208

Canton de San Mateo.

Barrios, etc.	Males.	Females.	Total.
Villa San Mateo (Centro)	340	361	701
Barrio de Santo Domingo	384	357	741
" " " " de Desmonte	244	217	461
" " " " de Ramadas	198	186	384
" " " " de Mastate	293	226	519
" " " " de Jesus Maria	146	125	271
" " " " de Maderal	141	135	276
Total	1,746	1,607	3,353

Canton de Naranjo.

Barrios, etc.	Males.	Females.	Total.
Villa del Naranjo (Centro)	777	830	1,607
Barrio de San Juanillo	444	546	990
" de Zarcero	374	334	708
" de San Miguel	392	413	805
" de Candelaria	281	283	564
" de Buena Vista y Tapesco	291	267	558
" de Barranca	280	219	499
" de Concepcion	259	246	505
" de San Carlos	189	112	301
" de Laguna	161	149	310
Total	3,448	3,399	6,847

*Province of Cartago.**Canton de Cartago.*

Barrios, etc.	Males.	Females.	Total.
Ciudad de Cartago (Centro)	1,638	1,853	3,491
Barrio de San Nicolas	1,357	1,407	2,764
" de Los Angeles	1,192	1,338	2,530
" de San Francisco	1,134	1,203	2,337
" de Carmen	988	1,066	2,054
" de San Rafael	892	995	1,887
" de La Concepcion	891	920	1,811
" de Guadalupe	961	1,075	2,036
" de Pascon y Pacayas	786	714	1,500
" de Santa Cruz y Capelladas	667	550	1,217
" de Corralillo	350	312	662
" de San Juan de Tobosi	270	278	548
" de Quebradilla y Bermejo	201	194	395
" de Tablón	170	171	341
Pueblo de Cot	399	418	817
" de Tobosi	395	360	755
Aldea de Cervantes	397	356	753
Total	12,688	13,210	25,898

Canton de Paraíso.

Barrios, etc.	Males.	Females.	Total.
Villa del Paraíso (Centro)	932	967	1,899
Barrio de Juan Viñas y Turialba	1,293	870	2,163
" de La Flor	366	331	697
Pueblo de Orosi	590	596	1,186
" de Tucurrique	347	292	639
" de Chirripo	158	122	280
Aldea de Cachi	278	238	516
" de Palomo y Ujarrás	227	212	439
Total	4,191	3,628	7,819

Canton de la Union.

Barrios, etc.	Males.	Females.	Total.
Villa de la Union	530	547	1,077
Barrio de San Diego	394	408	802
" de San Rafael	333	328	661
" de Concepcion	293	259	552
" de Dulce Nombre	185	182	367
" de San Juan	243	238	481
" de San Ramon	167	149	316
Total	2,145	2,111	4,256

Province of Heredia.
Canton de Heredia.

Barrios, etc.	Males.	Females.	Total.
Ciudad de Heredia (Centro)	2,873	3,174	6,047
Barrio de San Pablo	891	904	1,795
“ de San Joaquin	815	826	1,641
“ de San Isidro	970	1,003	1,973
“ de Mercedes	547	588	1,135
“ de San Antonio	559	648	1,207
“ de El Barreal	356	347	703
“ de Sarapiqui	397	164	471
“ de La Rivera	292	330	622
“ de San Francisco	430	456	886
Total	8,040	8,440	16,480

Canton de Barba.

Barrios, etc.	Males.	Females.	Total.
Villa de Barba (Centro)	419	493	912
Barrio de San Pedro	490	496	986
“ de San Pablo	251	262	513
“ de Santa Lucia	122	130	252
“ de San Roque	161	140	301
Total	1,443	1,521	2,964

Canton de Santa Barbara.

Barrios, etc.	Males.	Females.	Total.
Villa de Santa Barbara (Centro)	326	362	688
Barrio de San Pedro	290	278	568
“ de San Juan	294	302	596
“ de Santo Domingo	167	136	303
“ de Jesus	315	375	690
Total	1,392	1,453	2,845

Canton de Santo Domingo.

Barrios, etc.	Males.	Females.	Total.
Villa de Santo Domingo (Centro)	948	1,032	1,980
Barrio de San Miguel	516	477	963
“ de Santo Tomas	393	417	810
“ de Santa Rosa	359	395	754
“ de San Vicente	177	214	391
“ de Paraisito	95	95	190
Total	2,488	2,630	5,118

Canton de San Rafael.

Barrios, etc.	Males.	Females.	Total.
Villa de San Rafael (Centro)	808	804	1,612
Barrio de San Jose	481	494	975
“ de Los Angeles	277	257	534
“ de Santiago	341	383	724
“ de Concepcion	172	187	359
Total	2,079	2,125	4,204

Province of Guanacaste.
Canton de Liberia.

Barrios, etc.	Males.	Females.	Total.
Ciudad de Liberia (Centro)	1,095	1,131	2,226
Barrio de Sardinal	567	540	1,107
" de Filadelfia	388	390	778
" de Cañas Dulces	463	335	798
" de Palmira	296	257	553
" de Buenos Aires	254	167	421
Total	3,063	2,820	5,883

Canton de Cañas.

Barrios, etc.	Males.	Females.	Total.
Villa de Cañas (Centro)	179	222	401
Barrio de Colorado	434	207	641
" de Sandillal	147	134	281
" de Hotel	124	132	256
" de Santa Rosa	91	65	156
" de Buenaventura	94	80	174
" de Bebedero	102	61	163
" de Javia	46	47	93
Total	1,217	948	2,165

Canton de Bagaces.

Barrios, etc.	Males.	Females.	Total.
Villa de Bagaces (Centro)	180	239	419
Barrio de Bebedero	112	77	189
" de Agua Caliente	52	48	100
" de Tamarindo	85	37	122
" de Monte Negro	51	56	107
" de Montaña	68	59	127
" de Pijijé	68	54	122
" de Río Blanco	63	48	111
" de Salitíal	32	25	57
" de Joreo	26	18	44
" de Cofradía	38	40	78
Total	775	701	1,476

Canton de Santa Cruz.

Barrios, etc.	Males.	Females.	Total.
Villa de Santa Cruz (Centro)	346	386	732
Barrio de Belén	368	399	767
" de Veintisiete de Abril	352	382	734
" de Santa Rosa	296	300	596
" de Limón	220	223	443
" de Tempate y Arenal	297	294	591
" de Lagunilla	160	174	334
" de San Juan	150	139	289
" de Porte Golpe	151	162	313
" de Arado	144	137	281
" de Santa Bárbara	244	263	507
" de Bolsón	175	186	361
Total	2,903	3,045	5,948

Canton de Nicoya.

Barrios, etc.	Males.	Females.	Total.
Villa de Nicoya (Centro)	376	428	804
Barrio de Corralillo	222	186	408
“ de Matina	181	175	356
“ de San Antonio	161	167	328
“ de Santa Rita	167	130	297
“ de Matambú	158	153	311
“ de Dulce Nombre	127	134	261
“ de Sabana grande	176	172	348
“ de Humo	118	121	239
“ de Santa Ana	87	102	189
“ de San Joaquin	85	93	178
“ de San Lazaro	60	62	122
“ de San Pablo	38	51	89
“ de San Vicente	71	70	141
“ de Zapote	126	138	264
“ de Pueblo Viejo	132	110	242
Total	2,285	2,292	4,577

*Comarca de Puntarenas.**Canton de Puntarenas.*

Barrios, etc.	Males.	Females.	Total.
Ciudad de Puntarenas (Centro)	1,188	1,350	2,538
Barrio de los Quemados	704	567	1,271
“ de Pitahaya	148	100	248
“ de Lagartos	85	67	152
“ de Abangares	81	57	138
“ de Rio Grande	81	62	143
“ de Paquera	146	130	276
“ de Chomes	190	132	322
“ de Ciruelitas	120	83	203
“ de Puerto Alto	98	60	158
“ de Cabo Blanco	105	106	211
“ de Corosal	128	106	234
“ de Barranca	136	100	236
“ de Jicaral	66	47	113
“ de Chacarita	77	55	132
“ de Lepanto	75	63	138
“ de Chira	51	45	96
“ de San Miguel	55	43	98
“ de Jigante	52	53	105
“ de Morales	57	45	102
“ de Tambar	53	36	89
“ de Las Agujas	85	58	143
“ de Curú	29	36	65
“ de Presidio de San Lucas	153	—	153
“ de Golfo Dulce (Centro)	303	220	523
“ de Cabagra	43	40	83
“ de Buenos Aires	125	154	279
Pueblo de Terraba	107	124	231
“ de Baruca	175	214	389
Total	4,716	4,153	8,869

Canton de Esparza.

Barrios, etc.	Males.	Females.	Total.
Ciudad de Esparza (Centro)	607	638	1,245
Barrio de San Jerónimo	159	140	299
" de San Rafael	275	232	507
" de San Juan Grande	89	83	172
" de San Juan Chiquito	53	50	103
" de Macacona	131	113	244
" de Los Nances	118	87	205
" el Barón	52	40	92
" de Paires	91	86	177
" de Marañonal	69	66	135
" de Juanilama	80	39	119
Total	1,724	1,574	3,298

*Comarca de Limón.**Canton de Limón.*

Barrios, etc.	Males.	Females.	Total.
Ciudad de Limón (Centro)	1,517	627	2,144
Barrio de Reventazón	656	119	775
" de Matina	530	103	633
" de Jimenez	879	106	985
" de Hospital in 12 millas	340	171	511
" de Tortuguero	124	48	172
" de Estrella, Cieneguita, }	269	160	429
" de Bananito y Cahuita }	926	909	1,835
Total	5,241	2,243	7,484

Costa Rica had in 1892, taking this census as a basis, 313 communities distributed as follows:

76	in the province of San José with 76,718 inhabitants	203,505 inhabitants in <i>tierra templada</i> or temperate zone.
73	" " Alajuela " 57,203 "	
32	" " Cartago " 37,973 "	
31	" " Heredia " 31,611 "	
53	" " Guanacaste " 20,049 "	
40	" comarca de Puntarenas " 12,167 "	
8	" " Limón " 7,484 "	

As may have been observed, there is a great repetition of names in Costa Rica, especially of places named in honor of saints, which for commercial convenience will probably be changed. Of communities there are not less than

		In the Department of San José.	In the Department of Alajuela.	In the Department of Cartago.	In the Department of Heredia.	In the Department of Guanacaste.	In the Comarca de Puntarenas.
10	named San Rafael . . .	3	2	3	1	1	1
7	" San Juan . . .	2	2	1	1	1	1
7	" San Isidro . . .	1	4	1	1	—	—
7	" Concepcion . . .	—	4	2	1	—	—
6	" San Antonio . . .	3	1	—	1	1	1
5	" San Pedro . . .	1	2	—	2	—	—
5	" San Francisco . . .	2	—	1	1	1	—
5	" Los Angeles . . .	—	3	1	1	—	—
5	" San José . . .	1	3	—	1	—	—
5	" San Pablo . . .	2	—	—	2	1	1
4	" San Miguel . . .	1	1	—	1	—	1
4	" Santiago . . .	1	1	1	1	—	—
3	" San Vicente . . .	1	—	—	1	1	—
3	" San Jerónimo . . .	1	1	—	—	1	—
3	" Mercedes . . .	1	1	—	1	—	—
3	" Buenos Aires . . .	—	1	—	—	1	1
3	" Santa Rosa . . .	—	—	—	1	2	—
2	" Santa Ana . . .	1	—	—	—	1	—
2	" San Ramon . . .	—	1	1	—	—	—
2	" San Roque . . .	—	1	—	1	—	—
2	" Jesus	—	1	—	1	—	—
2	" San Joaquin . . .	—	—	—	1	1	—
2	" Santa Barbara . . .	—	—	—	1	1	—

Of these 313 communities, distributed in 5 provinces with 28 cantones and in 2 comarcas with 3 cantones, the following table gives their relative importance:

Centers.	Inhabitants.	In the warm zone.	In the temperate zone.
1 had	44	—	—
12 had from	50 to 100	—	—
51 "	100 "	250	11
79 "	250 "	500	25
109 "	500 "	1,000	17
27 "	1,000 "	1,500	3
18 "	1,500 "	2,000	1
7 "	2,000 "	2,500	2
5 "	2,500 "	3,000	1
2 "	3,000 "	4,000	—
1 "	6,000 "	7,000	—
1 "	20,000 "	25,000	—

In order to give an idea of the density of the population, there is roundly presented in the following table the area of each province and comarca, its total population and its population per square kilometer:

	Surface in square km.	Total Population.	Population in square km.	
Province of San José . . .	4,000	80,000	20.00	Temperate zone.
" Alajuela . . .	11,000	60,000	5.45	
" Cartago . . .	3,500	40,000	11.43	
" Heredia . . .	1,500	30,000	20.00	
" Guanacaste . . .	10,000	20,000	2.00	
Comarca de Puntarenas . . .	11,000	12,000	1.09	Warm zone.
" Limón . . .	13,000	8,000	0.61	

In regard to the age of the population, the census of 1892 shows that there were:

Males.	Females.	Years.	Males.	Females.	Years.
4,820	4,348	of less than 1	3,929	3,817	from 45 to 50
15,153	14,438	from 1 to 5	3,949	4,032	" 50 "
16,706	16,688	" 5 " 10	2,037	2,084	" 55 "
14,849	13,865	" 10 " 15	2,085	2,145	" 60 "
11,876	12,450	" 15 " 20	913	952	" 65 "
11,412	11,764	" 20 " 25	593	755	" 70 "
11,160	10,838	" 25 " 30	347	426	" 75 "
9,652	9,520	" 30 " 35	147	281	" 80 "
6,868	6,283	" 35 " 40	85	110	" 85 "
5,824	5,878	" 40 " 45	43	58	" 90 "
			32	43	" 95 to over 100

The military census gives the following figures of able-bodied men in the different cantones, provinces and comarcas:

Province of San José.

		Total.
San José . . .	3,345	from 18 to 35 years . . 1,218
		from 36 to 50 years, 4,563
Escasú . . .	702	" " . . 241
		" " " 943
Desamparados . . .	1,121	" " . . 372
		" " " 1,493
Puriscal . . .	931	" " . . 289
		" " " 1,220
Aserri . . .	623	" " . . 197
		" " " 820
Mora . . .	767	" " . . 235
		" " " 1,002
Tarrazú . . .	299	" " . . 88
		" " " 387
Goiçoechea . .	362	" " . . 138
		" " " 500
	8,150	" " " 2,778
		" " " 10,928

Province of Alajuela.

Alajuela . . .	2,125	from 18 to 35 years . .	732	from 36 to 50 years, 2,857
San Ramon . . .	1,191	" " . .	409	" " 1,600
Grecia	1,121	" " . .	387	" " 1,508
Atenas	943	" " . .	151	" " 1,094
San Mateo . . .	428	" " . .	142	" " 570
Naranjo	697	" " . .	229	" " 926
Palmares	442	" " . .	157	" " 599
	<hr/>		<hr/>	<hr/>
	6,947	" " . .	2,207	" " 9,154

Province of Cartago.

Cartago	2,512	from 18 to 35 years . .	869	from 36 to 50 years, 3,387
Paraiso	923	" " . .	327	" " 1,250
La Union	381	" " . .	163	" " 544
	<hr/>		<hr/>	<hr/>
	3,816	" " . .	1,359	" " 5,175

Province of Heredia.

Heredia	1,929	from 18 to 35 years . .	738	from 36 to 50 years, 2,667
Barba	341	" " . .	122	" " 463
Santo Domingo	623	" " . .	201	" " 824
Santa Barbara	298	" " . .	109	" " 407
San Rafael . .	478	" " . .	136	" " 614
	<hr/>		<hr/>	<hr/>
	3,669	" " . .	1,306	" " 4,975

Province of Guanacaste.

Liberia	732	from 18 to 35 years . .	257	from 36 to 50 years, 989
Cañas	122	" " . .	40	" " 162
Bagaces	146	" " . .	51	" " 197
Santa Cruz . .	578	" " . .	185	" " 763
Nicoya	491	" " . .	139	" " 630
	<hr/>		<hr/>	<hr/>
	2,069	" " . .	672	" " 2,741

Comarca de Puntarenas.

913	from 18 to 35 years . .	270	from 36 to 50 years, 1,183
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Comarca de Limon.

78	from 18 to 35 years . .	39	from 36 to 50 years, 117
<hr/>		<hr/>	<hr/>
Total			
Costa Rica . .	25,642	" "	8,631 " " 34,273

The movement of the population in regard to *births*, *deaths* and *increase* was in 1892 as follows:

Province or Comarca.	Births.	Deaths.	Increase.
San José	3,458	1,665	1,793
Alajuela	2,633	1,159	1,474
Cartago	1,616	802	814
Heredia	1,412	835	577
Guanacaste	717	284	433
Puntarenas	464	264	200
Limon	62	58	4
Total	10,362	5,067	5,295

During the first half of 1897 there were in the capitals of the same provinces or comarcas the following *births* and *deaths*:

	BIRTHS.			DEATHS.				
	Illegitimate.	Legitimate.	Total.	Males.	Females.	Males.	Females.	Total.
San José	179	428	607			247	209	456
Alajuela	82	290	372			117	115	232
Cartago	63	357	420			133	117	250
Heredia	13	76	89	825	795	85	92	177
Liberia	34	13	47			13	14	27
Puntarenas	35	15	50			44	35	79
Limon	28	7	35			38	24	62
Total	434	1,186	1,620	825	795	677	606	1,283

Deaths by Ages.

From 1 to 5 years	709
From 6 to 20 years	65
From 21 to 50 years	317
From 51 and upward	192
Total	1283

These data show in favor of births over deaths an increase of 337, of whom 148 were males and 189 females.

The causes of death in each 1000 cases were as follows:

Fever	220	Heart failure	31
Cholera infantum	112	Apoplexy and paralysis . . .	81
Diarrhea	52	Indigestion	12
Dysentery and colic	77	Gastro-enteritis	15
Typhoid fever	26	Enteritis	28
Bronchitis and pneumonia . .	91	Inflammation	35
Phthisis	42	Cancer	16
Influenza	17	Blood-poison	17
Dropsy	31	Syphilis	5

In regard to social conditions, the population of Costa Rica was distributed in 1892, by percentages, as follows:

Province or Comarca.	Married.	Divorced.	Widowers.	Widows.	Single Male.	Single Female.
San José	27.52	0.38	0.89	2.98	33.77	34.46
Alajuela	28.71	0.11	0.87	3.17	34.16	32.98
Cartago	26.76	0.08	1.16	3.98	34.82	33.20
Heredia	28.33	0.07	1.06	3.22	32.94	34.38
Guanacaste . . .	22.82	0.64	1.60	3.59	37.53	33.82
Puntarenas	18.17	0.30	1.17	3.51	40.07	36.78
Limon	5.05	0.16	0.39	0.70	69.18	24.52

With respect to instruction there were 28,208 individuals who could read, and 48,215 persons who could read and write, leaving 166,782 illiterates, or 68.58 per cent of the entire population who could not read or write.

It will be interesting for the economist to know the percentage of the population capable of reading, or writing and reading. It is as follows:

Province of Cartago.

Province of San José.

	Readers.	Readers and writers.
San José	20.00	38.98
Escasú	8.08	9.52
Desamparados . . .	15.40	20.01
Puriscal	9.16	11.82
Aserri	5.32	6.55
Mora	6.05	6.21
Tarrazú	9.09	10.95
Goicoechea	12.83	21.64
	14.72	25.69

	Readers.	Readers and writers.
Cartago	11.50	16.83
Paraiso	6.42	8.92
Lá Union	10.83	17.10
	10.38	15.23

Province of Heredia.

	Readers.	Readers and writers.
Heredia	15.42	27.81
Barba	12.72	20.27
Santo Domingo . . .	14.16	19.50
Santa Barbara . . .	11.53	17.40
San Rafael	9.08	14.81
	13.77	22.45

Province of Alajuela.

	Readers.	Readers and writers.
Alajuela	10.09	20.17
San Ramon	8.48	10.02
Grecia	8.32	11.22
Atenas	5.51	9.45
San Mateo	7.84	12.55
Naranjo	10.06	12.98
Palmares	6.66	15.45
	8.71	14.33

Province of Guanacaste.

	Readers.	Readers and writers.
Liberia	14.65	19.08
Cañas	7.71	10.85
Bagaces	8.94	18.63
Santa Cruz	10.47	13.14
Nicoya	11.84	15.05
	11.60	15.48

Comarca de Puntarenas.

	Readers.	Readers and writers.
Puntarenas	7.05	16.55
Esparza	7.43	11.76
	7.15	15.25

Comarca de Limon.

	Readers.	Readers and writers.
Limon	5.76	31.25
Total Costa Rica .	11.60	19.82

The total literates were 76,423 persons, or 31.42 per cent of the population.

In the capitals of the different provinces and comarcas the proportion was as follows:

	Readers.	Readers and Writers.
San José	25.37 per cent.	44.62 per cent.
Alajuela	16.92 "	31.58 "
Cartago	19.99 "	37.83 "
Heredia	15.66 "	36.31 "
Liberia	9.38 "	21.96 "
Puntarenas	17.25 "	26.24 "
Limon	13.47 "	39.55 "
	20.53 "	38.77 "

For these cities the total literates were 23,488 persons or 59.5 per cent. of their population.

There were, out of the total number, 17,483 school children, who were taught by 451 teachers in public schools.

There were also 6289 foreigners in the country, of which

2,516	were in the Province of San José.		
395	"	"	" Alajuela.
362	"	"	" Cartago.
138	"	"	" Heredia.
634	"	"	" Guanacaste.
1,293	"	"	Comarca de Puntarenas.
1,051	"	"	" Limon.

These foreigners were distributed by nationalities as follows:

1,302 Nicaraguans,	342 Germans,	160 Guatemalans,
831 Spaniards,	246 Englishmen,	156 Cubans,
812 Colombians,	204 Americans,	175 Chinamen,
634 Jamaicans,	195 Salvadorans,	132 Hondurans.
622 Italians,	189 Frenchmen,	

With respect to occupations, there were in Costa Rica in 1892:

896 Cattle-farmers,	2,102 Carmen,	82 Blacksmiths,
8,314 Agriculturists, male,	96 Mule drivers,	88 Hotel keepers,
194 Agriculturists, female,	565 Masons,	42 Physicians,
22,190 Laborers,	279 Butchers,	243 Musicians,
349 Servants, male,	900 Merchants,	16 Engineers,
2,348 " female,	911 Clerks,	12 Mechanics,
40 Cooks, male,	92 Lawyers,	6 Miners,
3,801 " female,	46 Surveyors,	41 Painters,
4,541 Seamstresses,	131 Barbers,	20 Silversmiths,
1,031 Laundry iron- ers,	913 Government employes,	15 Watchmakers,
5,873 Laundry clean- ers,	541 Cigarmakers,	27 Saddlers,
366 Tailors,	265 Hat makers,	49 Tanners,
378 Shoemakers,	111 Bakers,	12 Dyers,
980 Carpenters,	54 Pharmacists,	77 Printers,
	11 Commission merchants,	84 Sailors,
	36 Watchmen,	28 Carpet makers.

A distribution of the people by their principal occupations in the different cantones was as follows:

(See next page.)

Province of Alajuela.

Province of Cartago.

Province of Heredia.

Province of Guanacaste.

Comarca de Puntarenas.

Farmers.	Cattle-farmers.	Iaborers.	Servants.	Cooks.	Mercchants.	Carmen.	Tailors.	Shoe-makers.	Carpenters.	Blacksmiths.	Hat-makers.	Cigars-makers.	Government employees.
21 83	9 12	371 198	93 34	76 12	28 5	15 9	9 2	8 5	12 9	8 9	3 3	30 30	55 55

Comarca de Limon.

Government	Employees.	39
Cigarette-makers.	Hat-makers.	—
Blacksmiths.	Carpenters.	15
Shoemakers.	Tailors.	6
Carmen.	Clerks.	—
Merchants.	Cooks.	18
Servants.	Labourers.	276
Cattle-farmers.	Farmers.	18
Peasants.	35	...

The criminal statistics of Costa Rica for 1896 were as follows:

There were 4022 delinquencies punished by the police courts, namely: 1,295 in San José, 626 in Alajuela, 678 in Cartago, 520 in Heredia, 200 in Liberia, 424 in Puntarenas and 279 in Port Limon. Of these there were convictions of

- 1686 for drunkenness and disorder.
- 861 for slight misdemeanors.
- 340 for fighting, domestic scandals and inflicting slight injuries.
- 274 for violations of sanitary and moral ordinances.
- 280 for vagrancy.
- 80 for carrying arms.
- 65 for petty larceny.
- 6 for larceny.

There were also 989 criminal sentences recorded in the Court of Second Instance, together with 124 criminal and civil judgments in the Court of Cassation.

The national "Presidio de San Lucas" contained at the same time 170 prisoners. Costa Rica in 1896 had 1744 prostitutes, mostly between sixteen and twenty-five years of age, under supervision. Nearly half of this number were in San José, the rest in the ports and in Heredia, Alajuela and Cartago. Nearly 300 women were in the hospitals being treated for venereal diseases, while 502 individuals were registered in the "Department de profilaxis venerea."

There were during the same year thirteen commercial insolvencies, two cases of absolute and three of partial divorce.

The different courts of the country, during the year of 1896, entered 5417 civil and testamentary judgments, including a number concerning mining and national land claims

The people of Costa Rica must be considered as standing high above those of the neighboring countries in regard to morals and civilization. The mass of the people is industrious, honest, sober, clean, comparatively well-clothed, economical, obedient to the authorities and respectful of the laws.

VII.

IMMIGRATION AND COLONIES.

Immigration to Costa Rica has been small. During the first half of 1897 there entered 1533 individuals by Port Limon and 389 by the Port of Puntarenas; but during the same time 1150 persons left Costa Rica through Port Limon and 344 through Puntarenas. The result is a gain of only 428 persons in favor of the country. In 1896, the excess of registered immigrants over emigrants was 1112 persons, there having entered 3980 and departed 2868 persons. Several times attempts have unsuccessfully been made by foreigners to establish colonies.

Still there is a colony in the Department of Guanacaste, called "Colonia de Nicoya," which was commenced by Cubans, headed by Maceo, the late Cuban revolutionist chief. This colony possesses a sugar factory and five trapiches, producing 720 quintals of sugar and about 3000 quintals of mascabado. Only five colonists still cultivate tobacco. The colony has a school for boys and another for girls, the latter attended by thirty and the other by forty pupils. Besides there is here postal service and a telegraph office.

A second colony located in the San Carlos district is known as "Colonia de Aguas Zarcas," and has 500 lots, but it does not progress for lack of roads and markets easy to reach.

A third colony was established in Santa Clara, on a branch of the Atlantic Railroad. But there are actually there only eight families with about seventy hectares of cultivated land, one trapiche and a saw-mill.

Another colony was started by the River Plate Trust, Loan and Agency Company, Limited, in Turrialba, near the railroad between Limon and San José. There were 500 acres sold for 15 pesos each, 2071.9 acres for 20 pesos each, 750 acres for 25 pesos each, and 1381.1 acres for 30 pesos each, the land being situated on the Tuis River and Cabeza de Buey. Besides a contract was made with W. C. Beal from Portland, Oregon, U. S. A., for the sale of 14,000 acres on condition of procuring each year for seven years the settlement of a number of families to cultivate these lands. In order to give easy access to the markets, a cart road is in process of construction, which will connect the colony with the nearest railroad station.

The Government of Costa Rica is now preparing new laws in regard to immigration, colonization and sale of national lands. The former laws have been suspended, the Government being convinced that the lands appropriated in former years are more than sufficient to respond to the requirements of the next twenty years. The Government also thinks it to be preferable to promote by restrictive laws the subdivision of these lands and their cultivation than to consent to new grants under the former statutes. Exceptions are to be made for colonization companies and enterprises adapted to the economic development of the country.

In former years the Government of Costa Rica has often offered inducements in the way of land-grants for European immigration. In 1849 a grant of land of twenty leagues in length by twelve in breadth was made to a French company for 1000 colonists. The conditions of the contract were not carried out, though a considerable number of immigrants formed under it an establishment. A similar grant was made on the Atlantic coast to a British company, which had no result.

Still another concession was made, May 7, 1852, to a German company organized at Berlin with Baron von Bülow as Director. This enterprise died with its manager in 1856.

A further attempt was made in 1852, by Crisanto Medina, to whom a large grant of land was made for colonization pur-

poses at Miravalles, about 2500 feet above the sea, but this project too was abandoned after settling about thirty-seven Germans on the grant. In 1856, some French immigrants came, and in 1858 another colonization law was passed, and ever since the Government has persisted in the policy of augmenting the population by offering inducements to foreigners to settle in Costa Rica. All these Government proffers have, however, proved ineffectual.

VIII.

PUBLIC INSTRUCTION.

Elementary instruction of both sexes is compulsory and at the expense of the Government.

The following data are obtained from the Minister of Public Instruction, Licentiate Ricardo Pacheco. In 1896 Costa Rica had 327 primary schools with 21,913 enrolled pupils, or 53 per cent. of all the children of school age, as can be seen in the following table:

	NUMBER OF OFFICIAL SCHOOLS				NUMBER OF PUPILS.						
	Boys.	Girls.	Mixed.	Total.	Boys.	Girls.	Total.	Per school.	Per teacher.	Per 100 inhabitants.	For each 100 children of school age.
San José	43	43	6	92	3,766	3,766	7,118	78.45	28.81	9.27	54.57
Alajuela	46	45	16	107	3,028	2,862	5,890	55.04	32.36	10.29	60.57
Cartago	25	24	1	50	1,817	1,475	3,292	65.84	24.75	8.66	51.07
Heredia	20	20	7	47	2,132	1,728	3,880	82.56	26.76	12.27	72.19
Guanacaste	11	9	1	21	649	513	1,162	55.33	21.92	5.79	34.09
Puntarenas	5	4	—	9	297	199	496	55.11	22.59	4.07	23.98
Limon	—	—	1	1	30	45	75	75.00	37.50	1.00	58.96
	150	145	32	327	11,719	10,194	21,913	67.01	27.94	9.01	53.

This great number shows a marked predisposition of the people in favor of education. It is also a fact that Costa Rica holds the first place of all Latin American nations in regard to public instruction.

The number of school buildings is 215, besides 29 in process of construction and 50 projected. These 215 build-

ings are the property of the "Juntas de Educacion." Besides these, 107 buildings are rented and 6 loaned. There are

92 schools in 48 different localities in the Department of San José.					
107	"	67	"	"	"
50	"	27	"	"	"
47	"	29	"	"	"
21	"	22	"	"	"
9	"	8	"	"	"
1	"	1	"	"	"
<hr/>					
327 schools in 202 different localities.					

Costa Rica has more teachers than soldiers. The number of the former reaches the figure of 784, of whom 337 are men and 447 women, distributed in the following way:

	Men.	Women.	Total.	Costa Ricans.	Yearly Salaries in Pesos.
San José	98	149	247	221	128,540
Alajuela	80	102	182	167	79,920
Cartago	59	74	133	126	58,020
Heredia	63	82	145	137	61,260
Guanacaste	30	23	53	45	25,680
Puntarenas	7	15	22	13	11,700
Limon	—	2	2	2	2,100
	337	447	784	711	367,020

Among the foreign teachers are:

38 Spaniards,	2 Salvadorans,	1 Venezuelan,
12 Colombians,	2 Germans,	1 Frenchman,
9 Nicaraguans,	1 Honduran,	1 Englishman,
2 Guatemalans,	1 Mexican,	1 Italian.

The average monthly salary is 45 pesos.

There are over 250 "Juntas de Educacion" in the different Departments, Cantones and Districts.

The National Government aided them with 95,587.59 pesos, in the following manner:

16,572.99	pesos to the Juntas of the Department of San José.
14,686.10	" " " " Alajuela.
2,100.00	" " " " Cartago.
31,768.50	" " " " Heredia.
30,100.00	" " " " Guanacaste.
360.00	" " " " Puntarenas.

To aid these Juntas a special school-loan has been made; besides the taxes on slaughtering are turned over to them.

Higher education is given in the Liceo de Costa Rica, with 206 enrolled students, and in the Colegio Superior de Señoritas, with 223 students, both in San José; also in the provincial Institutes of Cartago, Alajuela and Heredia.

There is in addition a school for medicine and pharmacy in San José with seventeen students, and a law-school dependent on the "college of lawyers."

For other higher studies the Government pays the expenses of ten Costa Ricans in European universities and high-schools. Further, the Government of Chile allows six Costa Ricans to study at its expense in the pedagogical Institute of Santiago.

Another very important national institution is the "Instituto fisico-geográfico," under the direction of the very competent Professor H. Pittier, with three sections; a geographical section for topographical study and a construction of maps, also a meteorological and a botanical section. Their excellent publications have proved the great usefulness of this institution, and it is to be wished that its able and learned director will get adequate aid to carry out his promising studies of the physical features of Costa Rica.

Another useful institution is the "National Museum," under the intelligent direction of a young Costa Rican scientist, Mr. Anastasio Alfaro. It has an interesting section of archæology and ethnography, and a section of zoology, already rich in cabinets, to which is attached a small zoological garden.

A third useful institution is the "National Library" with 10,242 catalogued books and about 5,000 more ready to be registered and incorporated.

The first steps towards the organization of educational institutions were taken in 1824, under the administration of Don Juan Mora Fernandez. Then public instruction was declared an obligatory duty of the State. The institution, which afterward became the University of Santo Tomas, was founded in 1844, at the instigation of Dr. Castillo. The efforts of Costa Rica to advance education have been great and sus-

tained, and it is to be remarked that those in office have constantly shown laudable interest in the matter. In 1869 the Normal School was opened and a system adopted in harmony with modern standards.

As related to the subject of public education, the following list enumerates the names of the principal daily and weekly papers, periodicals and annual publications:

The principal *newspapers* are:

Dailies:

La Gaceta oficial,	El Fígaro,	El Pabellon Liberal,
Diario de Costa Rica,	La Prensa libre,	La Union Católica.
La República,	El Diarito,	
El Heraldo,	El Imparcial,	

Weekly publications are:

La Abeja médica,	El Sancho Panzo,
Boletin de las Escuelas Primarias,	El Bocaccio,
La Gaceta médica,	La Voz del Pueblo.
El Latiguillo,	

Annual publications are:

Anales del Museo Nacional,	Anuario de la Inspección general
Anales del Instituto fisico-geográfico,	de enseñanza,
Anuario estadístico,	Memorias de los Ministerios.

IX.

TRANSPORTATION, POST AND TELEGRAPH.

Port Limon on the Atlantic and *Puntarenas* on the Pacific Ocean are first in importance among the means of communication of Costa Rica.

In 1894 there entered the Port of Limon 294 vessels (271 steamers, 20 barks and 3 goletas), with a tonnage of 348,355 tons. Of these, 16 vessels bore the national flag, 142 the English, 12 the French, 26 the German, 27 the Swedish-Norwegian, 47 that of the United States, 11 the Nicaraguan, and 3 the Colombian flag.

During the same year there entered the Port of Puntarenas 158 vessels (125 steamers, 24 barks, 5 paileboats, 4 launches), having a tonnage of 155,869 tons. Of these, 14 carried the national flag, 34 the English, 1 the Italian, 23 the German, 3 the Swedish-Norwegian, 4 the Danish, 74 that of the United States, and 5 the Colombian flag.

In 1895 there entered the Port of Limon 311 vessels, with a tonnage of 281,361, while in the Port of Puntarenas there entered 147 vessels, with a tonnage of 146,313.

In 1896 there entered the Port of Limon 258 steamers and 41 sailing vessels, while 152 vessels entered Puntarenas, of which 73 were steamers of the Pacific Mail Steamship Company, 28 steamers of an English cattle transporting company, 8 German steamers of the Cosmos and Kirsten lines, 9 Colombian paileboats, 16 German barks, 11 Norwegian barks, 3 English barks, 2 Italian barks, and 1 French bark.

The agents of the different steamship lines in the capital, San José, are, for the Port of Limon: Mr. Juan Knöhr for the Hamburg American Steamship Company; Mr. John M. Keith for the Atlas Line; Mr. I. R. Sasso for the Italian

Line, La Veloce; Messrs. Lyon & Co. for the Royal Mail Line; Messrs. W. J. Field & Co. for the Prince Line; Mr. Minor C. Keith for the Spanish Transatlantic Line; Messrs. Alvarado & Co. for the French Transatlantic Line; Mr. Minor C. Keith for the New Orleans lines; while Messrs. Rohrmoser & Co. are the agents for the Port of Puntarenas of the Hamburg Pacific Steamship Company, the Kosmos Line and the Pacific Mail Steamship Company.

There are two important railroads, the Atlantic and the Pacific Railroads. The Atlantic Railroad goes from the Port of Limon westerly to Alajuela, a distance of 190 kilometers. The stations on the line are Limon, Moin, S. Mouth, Matina, Siquirres, La Junta, Pascua, Torito, Turrialba, Las Pavas, Tucurique, Juan Viñas, Santiago, Paraiso, Cartago, Tres Rios, Curridabat, San Pedro, San José, San Juan, Santo Domingo, Heredia, San Joaquin, Rio Segundo, Alajuela.

A branch of this road starts from La Junta, a point about thirty-four kilometers west of Port Limon, and runs first northward and then westward until it reaches Guapiles, a recently founded colony on the plains of Santa Clara. It was originally intended to lay the track to Carrillo and through the La Palma Pass to San José, but this plan has not been carried out.

Another branch goes from Port Limon to the Banana River, a distance of about five kilometers.

The gross earnings of this road were:

In 1891-1892	1,409,598 pesos.
" 1892-1893	1,973,936 "
" 1893-1894	2,250,979 "
" 1894-1895	2,446,701 "
" Second half of 1895	892,932 "
" 1896	2,618,113 "

The net earnings were as follows:

In 1891-1892	362,066 pesos.
" 1892-1893	697,479 "
" 1893-1894	674,452 "
" 1894-1895	1,030,160 "
" Second half of 1895	677,986 "
" 1896	1,114,290 "

It moved during the fiscal year of 1896:

574,723	passengers.
10,315	tons of goods for export.
23,245	" imported goods.
34,558	" local freight.
52,335	tons or 1,570,060 bunches of bananas.
3,801	animals.

This road has a number of good station-buildings, and a pier at Port Limon with all facilities for the quick handling of freight, especially of bananas. The freight rates are relatively very high.

The Pacific Railroad, about fourteen miles (or twenty-two kilometers) in length, belongs to the Government, and runs from Puntarenas east to Esparta, about seven hundred feet above the sea. It received in 1896, 18,486.60 pesos from freights and 19,392.80 pesos from passengers.

During the same time the Government expended 24,288.31 pesos in improvements.

Another railroad, on Government account, is under construction to connect San José with the Pacific coast, and a million pesos are annually set aside for the work. It is to be about ninety kilometers long and to run most of the way through the valley of the Rio Grande. The western end for about twenty-four kilometers will cross a roughly broken country in order to reach the roadstead of Tivives.

An important line of railway is projected to run from Jimenez, on the Guapiles branch of the Costa Rica Railway, fifty-six miles from Port Limon, to the mouth of the Rio Frio, near its entrance into the Lake of Nicaragua.

It is to cross the River San Carlos near El Muelle, from which point it is proposed to extend the line through a low pass of the Miravalles mountains, about two thousand feet above sea-level, to Culebra Bay on the Pacific. Such a railway would contribute enormously to the development of northern Costa Rica. The region traversed by the line is highly fertile. A connection of the Costa Rica Railway with Lake Nicaragua would also give to the State of Nicaragua

a much needed convenient access to the Atlantic Ocean for nearly its entire trade.

Another important project President Iglesias contemplates. It is a ship canal along the coast line from Matina to the Colorado River, and even on to the mouth of the San Juan, a total distance of over sixty-five miles. This coast consists of a continuous narrow sandbank between which and the mainland there is an inlet or arm of the sea, said to be navigable now for the whole distance.

This ship-canal would open an extensive banana region as well as excellent lands for the cultivation of cacao and rubber trees and many other tropical plants.

With respect to other internal communications, there exists a fairly good cart-road, opened about sixty years ago, from Cartago *via* San José to Puntarenas. Over this road nearly all export and import traffic was done until the Atlantic Railroad was opened in 1891.

Another cart-road runs across Guanacaste to Nicaragua. Besides these roads there is a small number of shorter and more local roads, not counting a well-paved one, about twenty-five miles long, now partly abandoned. It goes through the La Palma Pass towards Carrillo, Santa Clara and the Atlantic coast.

There is a tramway in Cartago, connecting the city with its suburbs and Aguacaliente. In San José a trolley line is soon to be established. Away from the conveniences now enumerated the people are wont to ride on horse or mule trails. The Government, however, takes care to increase and improve the cart-roads and other means of communications. During the last fiscal year over one hundred and ninety-four thousand pesos were spent on roads and bridges, and there is no doubt that Costa Rica, in this respect, too, is far ahead of the other Central American countries. Most of the Government expenditure named was spent on the national cart-road, the roads to San Carlos, Puriscal, Tablazo and Sarapiqui and on bridges over the Rio Grande, Reventazon, Bagaces, etc. In each district there is a "*Junta Itineraria*" for the conservation and improvement of roads, every proprietor participating in proportion to his property.

The following itinerary of roads and water routes, their distances and character, is reproduced from Mr. Richard Villafranca's "Costa Rica:"

Distances from San José, the capital of Costa Rica.

Towns.	Distance in miles.	Character.
Alajuela	13	Rail, cart road.
Atenas	24	Cart road.
Aguacaliente	15	Tramway, cart road.
Aserri	6	Cart road.
Alajuelita	3	"
Boca de Toro	160	Navigation from Limón.
Bustamante	21	Saddle road.
Boruca	120	"
Buenos Aires	120	"
Buena Vista	48	Cart road.
Boca de San Carlos	123	Navigation.
Boca del Rio Frio	132	"
Bebedero	132	"
Bagaces	147	Cart road.
Belen	183	"
Chile	18	"
Candelerita	30	Saddle road.
Curridabat	3	Railroad, cart road.
Carrillo	25½	Cart road.
Cartago	12	Railroad, cart road.
Cangrejal	123	Cart road.
Chirripo	42	Saddle road.
Cot	18	Cart road.
Carrizal	12	"
Chilamate	60	Saddle road.
Desamparados	3	Cart road.
Escasú	4½	"
Esterio Grande	78	Navigation.
Esparta	47	Cart road.
Filadelfia	177	"
Grecia	24	"
Guatuzo	25½	"
Guaitil	18	Saddle road.
Guadalupe	3	Cart road.
Heredia	6	Railroad, cart road.
Hacienda Vieja	72	Navigation.
Juan Viñas	27	Railroad, cart road.
La Vibora	27	Saddle road.
La Palma	12	Cart road.

Towns.	Distance in miles.	Character.
La Laguna	15	Cart road.
La Boca del Infierno	18	"
Limon	98	Railroad.
Los Frailes	18	Saddle road.
Las Cruces	18	"
La Laguna de Aserri	10½	"
La Virgen	54	"
Los Ojos de Agua	18	Cart road.
Los Angeles	27	"
La Barranca	25½	"
La Cuesta Vieja	54	"
Las Cañas	139	"
Liberia	165	"
La Cruz	201	Saddle road.
Muelle de San Carlos	69	"
Muelle de Sarapiqui	66	"
Nueva Santa Maria	60	"
Naranjo	33	Cart road.
Nicoya	213	"
Orosi	18	"
Palmira	180	"
Puntarenas	60	Railroad, cart road.
Peje	60	Cart road.
Paraiso	16½	Railroad, cart road.
Pirris de Aserri	30	Saddle road.
Paquita	75	"
Pacaca	14	Cart road.
Rosario	12	Saddle road.
Santa Rosa	220	Cart road.
Santa Cruz	198	"
Santo Domingo	39	"
San Mateo	36	"
Salimos	42	"
Sarchi	30	"
Sapotal	27	Saddle road.
Santiago de Puriscal	24	Cart road.
Sarcero	40½	"
San Jerónimo	30	"
San Roque	27	"
San Rafael	19½	"
Sabanilla	18	"
San Pedro de la Calabaza	18	"
San Ramon	51	Saddle road.
San Miguel	42	"
San Joaquin	9	Railroad, cart road.
Santo Domingo	3½	"
San Cristobal	24	Cart road.
San Miguel	27	Saddle road.

Towns.	Distance in miles.	Character.
Sabanilla de Aserri	24	Saddle road.
San Ignacio	12	"
Santa Maria	36	Cart road.
San Marcos	30	"
San Pablo Dota	27	"
San Cristobal	12	"
San Miguel	4 $\frac{1}{4}$	"
San Jerónimo	7 $\frac{1}{2}$	"
San Isidro	6	"
San Vicente	3	"
San Pablo	30	Saddle road.
Santa Ana	7 $\frac{1}{2}$	Cart road.
Tres Rios	7	Railroad, cart road.
Tabarcia	9	Cart road.
Tucurrique	36	"
Turrialba	33	Railroad, cart road.
Tambor	15	Cart road.
Tapezco	43 $\frac{1}{2}$	"
Tempate	213	"
26 de Abril	209	"
Villa Santa Barbara	12	"
Villa Barba	9	"
Varablanca	30	"
Zapote	45	"

The *postal service* is performed by seventy local post-offices. Correspondence is dispatched twenty-six times per month to foreign countries by steamers, and four times per month overland to the neighboring countries. From the port of Limon the mail goes to Europe, *via* Hamburg, twice a month, the 12th and 29th; by the Royal Mail on the 9th day of each month; and *via* Marseilles on the 12th of each month; to Europe and the United States *via* New York every Friday, and to Europe, the United States and Mexico *via* New Orleans every Monday.

From the Port of Puntarenas the mail goes to the West Indies and South America, *via* Panamá, three times a month, and as often also to the States of Central America. Overland to Nicaragua the mail is sent, *via* Liberia, every Thursday. In the Gulf of Nicoya are three steamers in the postal service,

namely the "Puntarenas," "Fernandez" and "Dr. Castro." The principal post-offices in Costa Rica are these:

Alajuela,	Guaitil,	Nicoya,	San Lucas,
Aserri,	Guadalupe,	Old Harbor,	San Marcos,
Atenas,	Grecia,	Pacaca,	Santa Ana,
Barba,	Heredia,	Puriscal,	San Juan,
Bagres,	Humo,	Puntarenas,	San Vicente,
Ballena,	Jimenez,	Palmares,	San Ramon,
Boruca,	Juan Viñas,	Paraiso,	San Carlos,
Bebedero,	Limon,	Quemadas,	Sardinal,
Cartago,	Liberia,	Reventazon,	Santa Cruz,
Carrillo,	Las Cañas,	San Isidro,	San Bernardo,
Curridabat,	La Union,	Santo Domingo,	Santa Maria Dota,
Desamparados,	La Cruz,	Santa Barbara,	Siquirres,
Desmonte	Mojon,	San Rafael,	San Mateo,
Escasú,	Matina,	San Antonio,	San Joaquin,
Esparta,	Naranjo,	San Pedro,	Térraba.

In 1896 there were received from

	Pieces.		Pieces.		Pieces.
The United States	Salvador	37,425	Honduras	10,697	
of America	189,966	Spain	29,966	Italy	11,970
Great Britain	64,763	Guatamala	27,000	Nicaragua	8,835
Germany	45,900	Colombia	20,263		
France	43,276	The Antilles	13,341		

During the same year there were sent out to

	Pieces.		Pieces.		Pieces.
The United States	France	22,738	Colombia	14,577	
of America	Italy	8,333	The Antilles	10,148	
Guatamala	Great Britain,	20,425	Honduras	9,159	
Spain	Germany	17,559	Argentina	6,354	
Salvador	Nicaragua	14,577			

The entire postal service comprised the movement of 3,494,515 pieces, 23,843 money orders and 6919 parcels. The receipts of the postal department were 48,318.69 pesos. On postal money-orders there were paid 358,280.76 pesos.

There are 1190 kilometers (744 miles) of telegraph lines connecting the following 65 offices:

Limon,	Escasú,	Naranjo,	Nicoya,
Matina,	Santa Ana,	San Carlos,	Ballena,
Juan Viñas,	Pacaca,	Zarcera,	Bolsón,
Cachi,	Puriscal,	San Ramon,	Santa Cruz,

Paraiso,	Santo Domingo,	Palmares,	Filadelfia,
Cartago,	Heredia,	Atenas,	Sardinal,
La Union,	San Isidro,	Desmonte,	Bagaces,
San Isidro,	San Rafael,	San Mateo,	Liberia,
San Vicente,	Barba,	Esparta,	Santa Rosa,
Guadalupe,	Santa Barbara,	Puntarenas,	La Cruz,
Curridabat,	San Joaquin,	Quemados,	Turrialba,
Santa Maria,	San Antonio,	Guacimal,	San Ignacio,
San Marcos,	Alajuela,	La Junta,	Buena Vista,
Aserrí,	Sabanilla,	La Palma,	San Jerónimo.
Desamparados,	San Pedro,	Cañas	
San José,	Grecia,	Bebedero,	
Central,	Sarchi,	Colonia Cubana,	

The number of private telegrams dispatched in 1896 to the interior was 270,284; of official messages to the interior was 69,172; official telegrams transmitted to Central America, 1086; private telegrams to Central America, 6554; telegrams received from Central America, 5413; cablegrams received, 26,762; cablegrams transmitted, 2845.

The total receipts from the telegraph service amounted in 1896 to 183,791.75 pesos, and the rates are very cheap. The nearest cable station is San Juan del Sur in Nicaragua.

There are also 203 miles of telephonic wire between San José and other communities and plantations, with about 2500 daily calls.

X.

AGRICULTURE AND LIVE STOCK.

Agricultural enterprise in Costa Rica is chiefly devoted to coffee. The proper coffee zone lies between 800 to 1400 meters of elevation on both ocean slopes. Experiments have proved that the coffee-tree can also be successfully cultivated at a height of 600 meters, and still lower down, by moderating the glare of the sun with adequate shades and by pruning to correct excessive growth and fructification.

"Coffee was introduced into the country from Havana in 1796 by Francisco Javier Navarro, as were also the mango and the cinnamon. The first seeds were sown in Cartago. Much credit for the propagation of coffee culture in Costa Rica is due to Padre Velarde, under the government of Don Tomas de Acosta, who took great interest in agriculture.

"During the administration of Don Juan Rafael Mora (1849-1857) farming received a remarkable development, for it was much promoted by the construction of important roads. The cultivation of coffee and sugar cane then absorbed the attention of the country to such an extent that, in 1861, 100,000 quintals were exported." (J. B. Calvo's book on Costa Rica).

The census of 1892 supplies the following figures concerning coffee:

Province of San José.

	Number of pla- tan- tions.	Number of trees.	Crop in quintals.	Crop in kilogr.	Value in pesos.
San José	1,628	7,321,708	95,942	4,413,732	2,648,239
Escasú	297	913,712	15,328	705,088	450,840
Desamparados	313	2,115,123	28,645	1,317,670	859,290
Puriscal	183	85,701	254	11,684	7,620
Aserri	223	272,809	701	32,246	21,030
Mora	137	42,312	191	8,786	5,730
Tarrazú	83	28,121	112	5,152	3,360
Goicoechea	89	302,143	10,432	479,872	167,955
Total	2,953	11,081,629	151,605	6,974,230	4,164,064

Province of Alajuela.

	Number of plantations.	Number of trees.	Crop in quintals.	Crop in kilogr.	Value in pesos.
Alajuela	547	2,247,809	26,546	1,211,116	796,380
San Ramon	214	715,592	5,527	254,242	165,810
Grecia	497	917,201	10,997	505,862	329,910
Atenas	50	110,599	1,027	47,242	30,810
San Mateo	20	23,883	189	8,694	5,670
Naranjo	171	299,829	40,321	1,854,766	1,209,630
Palmares	402	1,368,689	22,998	1,057,908	689,940
Total	1,901	5,683,602	107,605	4,939,830	3,228,150

Province of Cartago.

	Number of plantations.	Number of trees.	Crop in quintals.	Crop in kilogr.	Value in pesos.
Cartago	505	727,893	8,529	392,334	249,870
Paraiso	91	633,995	4,985	229,310	149,550
La Union	387	1,667,809	16,295	749,570	488,850
Total	983	3,029,697	29,809	1,371,214	888,270

Province of Heredia.

	Number of plantations.	Number of trees.	Crop in quintals.	Crop in kilogr.	Value in pesos.
Heredia	1,371	3,249,901	36,893	1,697,078	1,106,790
Barba	247	885,891	11,792	542,432	351,870
Santo Domingo	391	2,147,824	32,810	1,509,260	984,300
Santa Barbara	399	496,809	3,201	147,246	96,030
San Rafael	121	335,725	4,509	207,414	135,270
Total	2,529	7,116,150	89,205	4,103,430	2,674,260

Altogether Costa Rica, in 1892, had 8366 coffee-fincas with 26,911,078 coffee-trees, and a crop of 378,224 quintals or 17,388,704 kilograms, valued at 10,954,744 pesos.

It may be interesting to learn the amount of the coffee crops since 1883, given in sacks of fifty-nine or sixty kilograms each.

Sacks.	Sacks.	Sacks.	Sacks.
1883 . . 153,379	1887 . . 218,032	1891 . . 235,703	1895 . . 184,825
1884 . . 277,158	1888 . . 171,898	1892 . . 179,970	1896 . . 195,263
1885 . . 157,515	1889 . . 215,793	1893 . . 190,700	1897 . . 227,582
1886 . . 150,618	1890 . . 256,576	1894 . . 179,613	

Another important agricultural product of Costa Rica is the banana. Its cultivation was begun on the Atlantic coast in 1879, and the first 360 bunches were shipped, February 7, 1880, by steamer "Earnholm" from Port Limon to New York.

In 1884 there were 350 farms, comprising over four thousand acres of land, containing 570,000 banana plants, from which, in that year, 420,000 bunches were obtained. Before 1879 banana plants were set out in coffee plantations to shade the young trees and shelter their berries. The bananas were used to feed pigs. The laboring classes kept a few plants, using the fruit boiled with salt, or roasted on hot coals instead of bread.

The following table shows the banana export figures since 1883:

	Bundles.	Tons.
1883	110,801	3,693
1884	420,000	14,000
1885	401,183	13,373
1886	595,970	19,866
1887	889,517	29,651
1888	854,588	28,486
1889	990,898	33,030
1890	1,034,765	34,492
1891	1,133,717	37,791
1892	1,178,812	39,294
1893	1,278,647	42,621
1894	1,374,986	45,833
1895	1,585,817	52,861
1896	1,692,102	56,400

Sugar cane is used largely in Costa Rica as fodder and in the manufacture of aguardiente; also to produce the raw sugar or dulce, which is consumed entirely by country people.

In 1889 sugar cane by provinces was raised on the following number of acres:

In San José on 4819 acres; in Alajuela on 5076 acres; in Cartago on 1466 acres; in Heredia on 1114 acres; in Guanacaste on 719 acres; in Puntarenas on 1471, and in Limon on 122 acres. The aggregates were 14,787 acres, and a production of 1,368,000 pounds of sugar and 18,454,000 pounds of dulce.

Cacao culture has received but little attention in Costa Rica, because the more profitable coffee plantations absorb all the time and capital. The number of plantations regularly established up to 1888 was 198, having in all 56,426 trees that yielded in the same year 331,900 pounds valued at 165,770 pesos. Most of the cacao was cultivated in Aserri, Atenas, Naranjo, Heredia, Paraiso, Guanacaste and Limon.

Cacao was exported from 1884 to 1889 as follows:

Years.	Pounds.	Value in Dollars.
1884	9,927	3,227
1885	16,271	4,084
1886	5,776	2,223
1887	10,906	4,708
1888	18,410	3,576
1889	28,830	12,386
 Total	 90,120	 30,204

Excellent cacao was grown during Spanish colonial days around Matina, but none is exported now.

With respect to wheat, up to 1860 there was sufficient for the consumption of the country. It was so intelligently cultivated that the finer grades were produced. The rise in the price of coffee and the competition with the flour of the United States and Chile drove out the native wheat almost entirely, and to-day the cultivation of this grain is badly neglected. To-day the only flour-mill in this country grinds imported wheat.

Tobacco was a monopoly for many years, and only recently has the culture been taken up by the people.

Other important agricultural products are rice, beans, corn and potatoes.

The cultivation of rice in Costa Rica demands very little care and no irrigation to produce two crops a year of a very superior quality. Beans and corn are successfully grown everywhere in the country, while the raising of potatoes is almost wholly confined to the hillsides of Cartago and Alajuela, where they acquire an extremely fine quality.

According to the census of 1892, the average annual

production of these crops for that and the two preceding years was in liters as follows:

	Corn.	Beans.	Rice.	Potatoes.
San José	8,394,527	1,842,527	236,543	7,915
Alajuela	6,898,549	999,652	867,528	...
Cartago	7,874,642	1,724,628	...	1,745,725
Heredia	2,949,692	132,842	...	...
Guanacaste	1,862,598	92,321	121,342	...
Puntarenas	392,721	21,325	132,845	...
Limon	18,525	2,822	...	...
Total	28,391,254	4,816,117	1,358,258	1,753,640

Important agricultural districts are, besides the Central Highlands about one hundred and fifty kilometers in length by sixty kilometers in width, the great valleys of Talamanca, Santa Clara, Tortuguero, San Carlos and Rio Frio. Along the Pacific the great valley of Térraba and the plains of Golfo Dulce and Guanacaste are fertile regions, which, if properly tilled, would offer advantages equal to the Central Highlands, where nearly the entire population of Costa Rica is concentrated.

Plants characterizing fertile lands, rich in humus, on the Atlantic slope, are *Piper*, especially that with large leaves, *Loaseæ*, and certain *Acanthaceæ*. On the Pacific side such characteristic plants are *Piper*, with smaller leaves, the Pacaya Palm, and some ferns. Especially are the *Aspidium* and *Polypodium* found in large quantities.

Considering the future of Costa Rica, the question of farm labor is of vital importance. There are only a few Indians, and they are rapidly decreasing. It looks as though the fertile lowlands on the Atlantic and Pacific sides, as well as those in the extensive and fruitful San Juan valley, must be turned over to the Negro race as the only one capable of enduring so inhospitable a climate. These regions are the richest of all and could sustain a large population.

The *live-stock* of Costa Rica, though in general superior to that of the rest of Central America, is not yet sufficiently large to supply the local demand. Although there has been recent improvement in breeding cattle and horses, yet the high grade animals, which could be easily introduced into a

country of so many natural advantages, are still lacking. At different times the development of this industry has been attempted. Costa Rica has vast pasture lands splendidly adapted to cattle. It has very nutritious forage plants, like arrocillo, cola de venado, zacate de guinea, zacate de castilla, zacate pará, zacate ancho, grama, guate, caña de azucar, gamalote, sabanilla, teosinté, lengua de vaca, guácimo, jengibrillo, platanillo, etc.

The *live-stock* of Costa Rica in 1892 was distributed as follows:

	Cattle.	Horses.	Sheep.	Swine.
San José	51,884	17,542	1,538	23,628
Alajuela	62,410	16,774	159	16,185
Cartago	48,555	9,900	715	5,109
Heredia	35,391	6,380	57	13,241
Guanacaste	134,567	24,458	296	2,180
Puntarenas	9,667	1,721	—	1,128
Limon	3,191	268	—	857
Total	345,665	77,043	2,765	62,328

The consumption of cattle in Costa Rica is exhibited by the following data:

	1894.	1895.	1896.	First half of 1897.
San José	12,851	12,824	13,467	6,942
Alajuela	7,402	7,184	7,180	3,493
Cartago	5,207	4,881	5,297	2,506
Heredia	4,864	4,942	4,249	2,438
Guanacaste	2,701	1,990	1,928	882
Puntarenas	1,472	1,471	1,302	770
Limon	804	789	798	488
Total	35,301	34,081	34,221	17,519

Further official reports disclose that in the capital the consumption of meat is quite uniform during the entire year, while in the country it is greater from August to January than from February to July.

The total value of the natural, agricultural and live stock products of the country has been calculated at 19,000,000 pesos.

XI.

COMMERCE AND INDUSTRY.

Joaquin Bernardo Calvo, in his work on Costa Rica published in 1890, observes that "at the beginning of the Colonial Government the Port of Suerre, on the Atlantic coast, had some commercial importance, but that the Port of Rivera on the west coast of the Gulf of Nicoya was greater, as were also Coronado del Norte on the Island of Caño and the Golfo de Ossa, now Golfo Dulce.

"All the ships then plying on the Pacific between Mexico Panama, Perú and intermediate ports were wont to ride at anchor at the Island of Caño. The most important centre of commerce in those times was the City of Santiago de Talamanca, now extinct, whence cargoes were sent in three days' time to Porto Bello. The exports of that age were cacao, potatoes, honey, wax, sarsaparilla and hemp. When the city was destroyed its traffic was dispersed.

"In 1638 the opening of the Matina road was the beginning of a new era. The cacao haciendas in the valley of that name acquired a new importance. At the same time the Gulf of Nicoya became a centre of traffic. Costa Rica was then in a flourishing condition and would have prospered finely but for the pirates and Mosquito Indians, who constantly menaced its welfare and whose vandalism ravaged the coast settlements.

"After that period Costa Rica was reduced to woeful misery, carrying on an insignificant commerce overland with Panama by mules and sending a few unimportant articles to Nicaragua. Thus more than a century passed.

"In the present century (1813) the Captaincy General imposed severe restrictions on the commerce of the Province.

At the time of declaring independence the situation of Costa Rica was wretched.

"Just beginning an independent career, struggling to inaugurate a system of government wholly new and opposed to the preceding one, contending with poverty, in a state of complete upheaval, the work undertaken by the forefathers of the present Costa Ricans was full of difficulties.

"Coffee culture gave a new impulse and importance to Costa Rica. At the close of the first half of the Nineteenth Century commerce was carried on with the north through Matina and Sarapiqui, and through Caldera on the Pacific.

"The greater facilities available on the Pacific coast, however, especially when a line of steamers connecting with the Panama Railroad opened a new way to the Atlantic, turned the course of business to Puntarenas, a new port which soon became the sole commercial route.

"This state of things, unnecessarily adding to the expense of importations, continued for years. When the Port of Limon was opened to commerce the competition of two routes and the new facilities of a railroad and a wagon road to the Atlantic greatly promoted traffic and contributed to the general wealth."

In 1848 seventy vessels entered Puntarenas, having a registration of 7180 tons. In 1884 this number had increased to 113, having 137,368 tons registration, and in the same year there entered Port Limon 121 vessels of 126,875 aggregate tonnage. In 1894 there entered 158 vessels with 155,869 tons at Puntarenas, and 294 vessels with 348,355 tons at Port Limon. The freight in 1858 on coffee to Panama by steamer alone was five-eighths of a cent per pound. In 1870 the West India and Pacific Company's steamers received as freights from Puntarenas to Liverpool, £5 10s. od. per ton; from Puntarenas to London, £6 2s. 6d. per ton.

In 1888 freights from Puntarenas to European ports were £4 per ton, and from Port Limon £2. To-day the freight rates are cheaper still.

The present tariff is in many ways inequitable. It is based on no principle, and, with the exception of some later laws especially enacted, it does not correspond with the

economic condition and commerce of the country. Yet on a great number of articles the tariff is less than in Mexico, Guatemala, Salvador, Peru, Bolivia and Uruguay.

The custom-duties are collected on gross weight, and generally amount to from twenty to twenty-five per cent. on the valuation of imports. They are paid one-half down and one-half within three months' time. All goods for Costa Rica have to come accompanied by corresponding consular invoices. The principal importations are silk, wool, linen, cotton, machinery, implements and tools for agriculture and other industries, furniture, glassware, tinware, hardware and haberdashery, ornaments, articles of luxury, mercury and perfumery, beer, wines, liquors, soap, coffee-sacks, flour, sugar, shoes, saddles, harnesses, butter, etc.

Table of Exports and Imports of Costa Rica Since 1884.

	Exportations.	Importations.
1884	\$3,745,400 gold.	\$3,521,900 gold.
1885	2,535,500 "	3,660,900 "
1886	2,257,600 "	3,537,600 "
1887	4,689,100 "	5,601,200 "
1888	4,052,300 "	5,201,900 "
1889	4,612,800 "	6,306,400 "
1890	6,664,700 "	6,615,400 "
1891	6,116,800 "	8,351,000 "
1892	4,725,900 "	5,389,700 "
1893	4,294,200 "	5,849,500 "
1894	{ 5,053,113 12,488,263 silver.	4,094,853 "
1895	{ 5,922,204 gold. 14,509,440 silver.	3,851,460 "
1896	5,597,727 gold.	4,748,818 "

Imports and Exports by Countries.

1892.

	Imports in gold.	Exports in silver.
Great Britain	\$1,702,145	\$4,916,287
Germany	947,647	386,737
France	526,382	70,004
Spain	189,623	—
Italy	32,412	—
Belgium	7,280	—
United States	1,295,682	3,642,896
Mexico	18,725	—

Colombia	\$82,326	\$20,912
Ecuador	125,416	800
Peru	3,890	502
Cuba	123,921	—
Jamaica	81,609	—
Central America	252,691	75,810

1893.

	Imports in gold.
Great Britain	\$1,697,944
Germany	1,123,836
France	807,761
Spain	192,026
Italy	39,829
United States	1,399,615
Mexico	11,993
Colombia	228,036
Ecuador	94,387
Cuba	40,023
Jamaica	25,939
Central America	143,437
Total	\$5,804,926

1894.

	Imports in gold.
Great Britain	\$907,462
Germany	566,367
France	223,479
Spain (Cuba)	103,276
Italy	40,215
United States	940,640
Colombia	32,138
Ecuador	36,917
Belgium	7,082

Commodities Imported in 1894.

	Gold.	Pesos.
General merchandise	\$2,857,580 56	7,062,224 60
Merchandise not dutiable	944,835 09	2,335,065 44
Coined money	4,183 46	10,339 00
Silver bars	89,018 37	220,000 00
Animals	30,929 84	76,440 00
Animals coming overland	91,041 52	225,000 00
Lumber	15,911 27	39,323 12
Passengers' baggage	6,352 45	15,699 45
Merchandise from custom houses .	5 000 00	123,570 00
Merchandise by post	50,000 00	123,570 00
Total	\$4,094,852 56	10,120,018 61

Total Exports for 1894.

	Gold.	Pesos.
Coffee	\$4,198,252 08	10,375,560 19
Bananas	443,315 37	1,095,609 60
Coined money	58,611 78	144,852 95
Gold, not coined	23,500 00	58,078 10
Woods	144,584 66	357,326 53
Various products	115,231 68	284,783 58
Unspecified products	69,617 57	172,052 86
 Total	 \$5,053,113 14	 12,488,263 81

1895.

Imports by Countries.

	Gold.
Great Britain	\$851,849
Germany	684,118
France	261,534
Spain (Cuba)	223,441
Italy	33,088
Belgium	5,978
United States	1,179,546
Central America	263
South America	65,633

1896.

	Gold.
Great Britain	\$1,264,856 33
Germany	893,816 66
France	378,906 35
Spain (Cuba)	162,825 54
Italy	71,769 52
Belgium	3,089 48
Denmark	103 05
Portugal	24 00
United States	1,401,074 25
Central America	813 75
Colombia	16,951 48
Ecuador	38,385 27
Peru	15,791 35

Commodities Imported in 1896.

	Gold.
Merchandise entered at custom houses	\$4,226,925 05
Merchandise sent by post	61,622 93
Baggage of marine passengers	6,095 84
Baggage of overland passengers	5,000 00
Woods	21,481 98
Animals	423,069 23
Coined money	4,623 59
 Total	 \$4,748,818 62

Total Exports for 1896.

	Gold.
Coffee, 11,089,523 kgs., valued at	\$4,318,285 90
Bananas, 1,692,102 bunches, valued at	670,072 40
Woods, valued at	485,695 35
Coined and other metal, valued at	29,459 50
Re-exports and provisions, valued at	11,328 59
Various commodities	82,885 27
 Total	 \$5,597,727 01

Imports by Countries for First Half of 1897.

	Gold.
Great Britain	\$518,833 37
Germany	357,652 02
France	167,303 77
Spain	55,154 48
Cuba	20,543 78
Italy	83,070 50
Belgium	4,893 50
United States	871,646 91
South America	94,571 90
Santo Tomas	445 00
Nicaragua	10,739 90
Guatemala	288 06
Salvador	21,334 50
Postal packages	44,999 30
Merchandise in passengers goods	1,493 40
 Additional for 3816 animals, valued at	 \$2,252,970 39
 Total	 74,743 60
	 \$2,327,713 99

The following list, which I owe to the amiability of the highly competent Director General of the National Department of Statistics, Hon. Manuel Aragon, shows the principal articles of import and their value in gold pesos by countries since 1893:

United States.		Great Britain.						Germany.			France.		
1893.	1894.	1895.	1896.	1893.	1894.	1895.	1896.	1893.	1894.	1895.	1896.	1893.	1894.
Wheat flour	289,418	139,421	191,478	234,528	...	...	...	...	...	...	...	...	...
Wheat	21,418	27,768	31,354	35,925	...	...	...	...	...	...	...	...	...
Corn	42,818	50,486	2,001	2,039	...	...	...	...	...	...	...	...	...
Beans	29,416	9,056	3,818	8,777	...	...	...	...	...	...	...	...	...
Rice	57,429	4,561	34,182	42,233	...	...	3,109	1,785	...	...	7,128	29,998	14,622
Tobacco	6,437	78,416	114,866	120,283	65,530	...	...	...	50	...	...	...	...
Butter, lard	...	20,436	13,353	21,520	20,015	6,593	5,309	770	...	...	...	...	...
Beer	14,318	541	6,915	18,584	46,431	1,657	4,665	...	...	...	...	8,101	21,174
Wine	...	...	...	...	...	...	...	...	...	...	7,648	24,792	...
Drugs and medicines	37,469	26,187	8,107	12,718	52,395	18,916	7,910	...	...	45,631	4,993	16,421	35,841
Perfumes	5,693	1,196	862	1,064	5,385	4,62	332	...	...	7,826	1,43	1,840	3,301
Oil paints	...	1,326	2,898	2,886	9,353	1,838	2,760	...	...	15,821	3,904	4,188	7,450
Fence wire	28,416	13,264	18,378	33,065	47,769	245	948	...	...	30,418	16,494	9,512	...
Sacks for coffee	1,005	1,459	2,063	43,628	27,476	37,141	...	...	...	17,620	9,414	10,049	...
Furniture	6,409	11,359	21,328	15,310	6,823	1,601	2,978	...	...	12,345	4,792	17,752	...
Shoes	9,416	14,084	6,918	7,460	14,421	6,836	2,758	2,250	...	12,427	11,793	5,598	5,106
Hardware	30,268	27,116	931	159	23,462	7,461	967	14,416	...	2,764	5,051	5,892	53
Cashmeres	...	...	2,263	1,803	28,791	18,760	36,242	58,417	...	28,027	58,992	49,632	139,818
Implements	6,326	1,779	...	12,720	3,246	193	1,176	1,176	...	36,3	1,478	1,478	2,290
Machinery	19,816	19,686	45,237	52,352	49,762	6,226	961	13,952	...	1,835	1,252	497	1,926
Mercury	32,416	...	...	1,720	31,945	...	...	968	38,893	3,103	3,777	47,328	20
Cloth	...	...	...	202	37,626	9,161	6,606	7,409	9,681	2,075	2,236	4,18	6,439
Cotton goods	29,491	461	3,314	27,582	72,416	...	5,823	60,369	12,491	10,230	5,374	47,070	7,281
Mixed cotton and woolen	...	...	...	...	...	...	...	...	...	...	...	...	...
Prints	31,896	20,821	18,556	31,097	12,119	13,009	72,335	8,419	4,368	...	...	1,049	202
Fancy articles	23,418	...	...	...	182,129	92,498	110,224	141,659	131,416	1,933	8,035	9,912	945
Sugar	29,437	4,561	...	...	4,236	...	...	...	108,412	...	...	75,417	...
Cotton shirts	...	1,859	3,007	...	6,128	103	...	...	7,128	...	...	...	...
Preserv. meats	8,211	...	8,062	...	1,094	17,563	18,113	...	...	...	...	1,795	151
Coal	23,416	7,065	2,818	...	3,497	1,673	6,147	...	...	...	...	3,147	752
Ready-made	...	...	...	...	78,543	23,828	13,136	...	...	...	...	...	6,870
Clothing	...	1,434	...	...	...	...	...	...	...	...	...	...	...
Cognac	2,896	137	246	...	9,461	219	...	...	...	...	...	14,973	23,801
Cotton drills	...	1,516	2,585	...	43,897	15,803	14,178	...	...	...	...	46,322	176
Preserv. Fruits	13,228	...	...	...	8,976	...	...	...	...	...	...	7,626	...

Railroad material	77,702	4,023	155,346	8,502	4,185
Galvan. iron	263	3,198	9,896	42,701	9,705
Ordinary soap	1,004	2,627	13,418	3,058	4,837
Fine jewelry	1,028	321	32,106	3,192	4,880
Cotton shirting	1,061	115	75,417	15,844	7,382
Chinaware	380	256	8,423	2,436	3,726
Axes	521	6,525	5,202	6,069	16,933
Machetes	4,472	4,437	14,617	20,508	87
Manta-cruda	19,416	16,932	14,617	15,098	7,521
Sewing m achines	21,640	6,379	3,201	102	10,677
Cotton hand-kerchiefs					12,130
Sardines			12,819	24,721	12,130
Candles	1,065	023	8,619	1,263	5,262
Matches			35,709	29,963	8,645
Cigars					14,527
					14,427
					4,965
					8,248
					18
					5,102
					2,378
					243
					746

Among other countries *Spain*, including Cuba, imported in 1893, alcohol (\$26,346), cigarettes (\$11,418), cognac (\$8976), liquors (\$14,719), cotton cloth (\$19,416), and wines (\$126,417); in 1894, alcohol (\$15,500), cigarettes (\$7753), wines (\$30,436); in 1895, alcohol (\$81,000), cigarettes (\$10,800), tobacco (\$6288), wines (\$46,957).

Colombia imported in 1893, alcohol (\$7783), cacao (\$4229), cattle (\$115,847); in 1894, cacao (\$9710); in 1895, cacao (\$11,720), tobacco (\$6959).

Italy imported in 1893, marble (\$4623), wines (\$14,791); in 1894, wine (\$3491); in 1895, butter (\$2209), hats (\$1240), cotton cloth (\$1568), and wines (\$6933).

Central America imported in 1893, tobacco (\$112,418), sugar (\$9895), cacao (\$2846), maize (\$6891), butter (\$2893), cigars (\$7626).

The exportation during the first six months of 1897 was as follows:

	Total value.	Port of Limon.		Port of Puntarenas.	
		Kilos.	Value.	Kilos.	Value.
	Gold.				
Coffee, in parchement .	\$538,462 20	1,794,874	\$538,462 20	•	•
Coffee, in oro	4,127,698 05	10,139,879	3,548,957 65	1,653,544	\$578,740 40
Bananas	225,267 50	27,400,966	225,267 50	•	•
	Silver.				
Cedar wood	525,042 09	•	•	656,451	525,042 09
Mora wood	67,831 16	•	•	3,322,435	67,831 16
Hides	41,443 59	125,397	37,665 80	7,945	3,777 79
Rubber	13,961 95	7,587	11,095 75	2,194	2,866 20
Gold, in bars	7,200 00	12	7,200 00	•	•
Gold, coined	6,117 17	6	6,117 17	•	•
Skins	5,977 59	49	60 00	6,557	5,917 59
Cacao	2,898 15	1,294	1,548 40	659	1,349 75
Guayacum wood	2,809 96	•	•	138,000	2,809 96
Potatoes	1,590 14	597	112 00	11,535	1,478 14
Plants, alive	1,487 00	1,846	1,487 00	•	•
Blue thread	1,679 00	•	•	134	1,679 00
Hule or rubber	1,767 00	1,350	1,767 00	•	•
Soap	700 00	•	•	1,890	700 00
Cocobola wood	640 67	•	•	31,465	640 67
Dulce (mas cabado)	606 04	175	52 00	3,565	554 04
Zarzaparrilla	377 15	468	360 90	29	16 25
Cedron	143 75	•	•	264	143 75
Sugar	223 02	•	•	732	223 02
Pita-hats	68 00	•	•	70	68 00
Caoba (mahogany)	374 32	•	•	111	374 32
Pearl shell	350 00	•	•	2,241	478 00
Turtles, alive	200 00	2,000	200 00	•	•
Turtle shell (carey)	150 00	16	150 00	•	•
Total	\$5,201,966 58	39,491,033	\$4,348,123	5,231,835	\$853,843 27

In regard to coffee there were exported from October 1, 1896, to June 30, 1897, 231,904 sacks (13,843,088 kilos), of

which 84.67 per cent., or 196,343 sacks, in oro, and 15.33 per cent., or 35,561 sacks, in pargement. From this amount 87.93 per cent., or 203,913 sacks (12,184,027 kilos), went through Port Limon and 12.07 per cent., or 27,991 sacks (1,659,061 kilos), through Puntarenas.

From Limon 61.329 per cent. was transported by the Atlas Line, 32.300 per cent. by the British Royal Mail, 2.271 per cent. by the French Steamship line, 3.299 per cent. by the German Line, 0.801 per cent. by other lines.

It will be interesting to know the places to which this large amount of coffee is shipped. These particulars are found in the following list:

	Sacks.	Kilogr.
London	133,676	7,903,450
San Francisco	19,946	1,183,980
New York	33,887	2,072,289
Hamburg	24,833	1,502,311
Bordeaux	5,827	346,822
Paris	206	12,524
Bremen	12,373	
Montreal		
Antwerp	310	
Lockport	1	
Chicago	1	
Malaga	1	
Geneva	439	
Trieste	254	
Valparaiso	50	
Panama	62	
Barcelona	1	
 Total	231,904	13,843,008

In connection with the coffee trade there are here given interesting statistics concerning the average annual consumption of coffee *per capita* of the population of different countries:

Pounds.	Pounds.	Pounds.
Holland . . . 21.00	United States . . 7.61	Greece . . . 1.24
Denmark . . . 13.89	Sweden 6.11	Italy 1.00
Belgium . . . 13.48	Germany . . . 3.94	Great Britain, 1.00
Norway . . . 9.80	France 2.73	European
Switzerland . . 7.03	Austria 2.13	Russia . . . 0.19

Industries.—The scarcity of working people and the absence of capital were formerly the greatest barriers to the

progress of industry, while at the same time the abundance and relative cheapness of imported articles rendered useless all attempts at home production.

In regard to industrial and manufacturing establishments and workshops, there were in 1892:

842 in the Province of San José.		
700	"	Alajuela.
193	"	Cartago.
272	"	Heredia.
187	"	Guanacaste.
89	"	Comarca de Puntarenas.
20	"	Limon.
<hr/>		
2303		

Distribution of industrial and manufacturing establishments in Costa Rica.

	San José.	Alajuela.	Cartago.	Heredia.	Guanacaste.	Puntarenas.	Limon.	Total.
Iron foundries	2	.	1	.	.	.	1	4
Blacksmith-shops	25	11	5	7	9	0	2	68
Gunsmith-shops	3	1	.	.	1	2	.	7
Flour-mills	1	.	.	.	.	.	.	1
Soap factories	5	.	1	1	.	.	.	7
Breweries	3	.	1	.	.	.	.	4
Ice factories	2	.	.	.	.	.	1	3
Distilleries	1	.	.	.	.	.	.	1
Brick and tile factories	22	29	34	4	18	2	.	109
Fine brick-yards	2	.	.	.	.	.	.	2
Lime-kilns	7	12	10	1	3	1	.	34
Cartridge factories	1	.	.	.	.	.	.	1
Sugar factories	1	6	2	.	.	.	.	9
Sawmills	16	35	9	6	4	1	3	74
Coffee-mills	80	75	16	85	.	.	.	256
Iron sugar-mills	205	154	32	46	10	2	.	449
Wooden sugar-mills	248	258	21	13	82	17	.	639
Marble yards	1	.	.	.	.	.	.	1
Stone-cutting yards	1	1	1	.	.	.	.	3
Carpenter-shops	31	28	8	37	19	15	3	141
Cabinet-shops	5	2	3	1	.	2	.	13
Tailor-shops	25	13	10	17	14	7	3	89
Tanneries	9	5	3	5	16	.	1	39
Shoemaker-shops	38	17	9	16	12	8	3	103
Barber-shops	17	9	3	12	4	6	2	53
Saddleries	11	8	5	1	4	.	.	29
Bakeries	22	7	3	3	2	7	1	45
Confectioners	5	1	.	1	.	.	.	7
Drug stores	15	16	8	9	4	5	1	58
Dyeing establishments	5	5	.	2	1	1	.	14
Photograph galleries	3	.	.	.	.	.	.	3
Printing establishments	9	1	.	.	.	.	.	10
Lithographers	1	.	.	.	.	.	.	1
Book binderies	4	.	.	.	.	.	.	4
Watchmakers	7	1	4	3	.	.	.	15
Silversmiths	4	5	4	2	4	3	.	22
Candle factories	5	.	.	.	.	.	.	5
Total	842	700	193	272	207	89	20	2323

There are in San José the San José Foundry and the National Workshop, which contributed greatly to the progress of mechanical arts, iron manufactures, cabinet work, machinery, implements, farming utensils, tools, etc.

There also exist a silk and cotton factory, manufacturing fine articles like shawls, scarfs, wraps, in the favorite colors of the people; also an ice factory, a shoe factory and a flour-mill.

Among the miscellaneous companies we have to mention the Agency Company for unloading and loading vessels, capital 200,000 pesos; San José Market Company, capital 215,000 pesos; Cartago Market Company, capital 100,000 pesos; Heredia Market Company, capital 100,000 pesos; Monte de Aguacate Mining Company, capital 500,000 pesos; La Trinidad Mining Company, capital 250,000 pesos; Costa Rica House Construction Company, capital 250,000 pesos; Costa Rica Pacific Gold Mining Company, Limited; Electric Light Company.

XII.

FINANCE AND BANKING.

The revenue of the Government of Costa Rica is derived from custom-house duties, revenue stamps and stamped paper, liquor monopoly, tobacco revenue, coffee tax, sale of public lands, tax for registering property, tax on slaughtering live stock, etc.

The national revenue for 1896 was as follows:

	Pesos.
Revenues proper	6,685,178 87
Public service (post, etc.)	233,529 89
Various sources	89,079 14
Funds in administration (postal-money orders, etc.)	395,104 88
Public credit	32,718 00
<hr/>	
Total	7,435,610 78

To this sum

	Pesos.
The main custom house in San José contributed	1,930,746 58
The custom house in Puntarenas	474,148 27
“ “ “ Limon	404,444 25
“ national liquor business	2,242,174 96
Tobacco revenue	778,211 75
Coffee tax	61,415 00
Lumber tax	15,044 26
Stamped paper	70,164 30
Revenue stamps	39,469 38

Expenditures during the fiscal year ending in 1896 amounted to 6,697,326.51 pesos, distributed in the following manner:

Ordinary Disbursements for Administration.

	Pesos.
Department of Gobernacion	666,429 55
“ Police	163,051 84
“ Fomento	628,350 98
“ Foreign Office	101,170 74
“ Justice	274,568 83
“ Public Instruction	630,627 41

	Pesos.
Department of Cultus	24,101 00
" War	432,943 09
" Military police	235,152 56
" Navy	47,559 51
" Finance	297,414 62
Various services	<u>1,229,823 86</u>
	4,731,193 99
	Various Services.
	Pesos.
Department of Beneficence	101,213 44
Various other services	<u>115,904 61</u>
	217,118 05
	Monopoly Services.
	Pesos.
Buying tobacco, sugar, etc., freights	277,126 34
Contract of Odilon Jimenez	18,372 52
Contract of Robato & Beguiristain	<u>1,840 53</u>
	297,339 39
	Funds in Administration.
	Pesos.
Billets of Instruction	19,883 97
Postal orders	<u>347,530 81</u>
	367,414 78
	Interior Debt.
	Pesos.
Bills payable	475,495 55
Interest and discounts	15,991 15
Private deposits	39,558 00
Amortization of national notes	340,888 52
Hospital of Alajuela	14,215 53
Bank of Costa Rica, contract of June 20, 1894 . .	135,068 82
Deposits in favor of pupils of Barroeta	<u>6,558 06</u>
	1,027,775 63
	Consolidates.
	Pesos.
Hospital of San Juan de Dios	13,640 00
Ecclesiastical funds	6,337 50
Legate of Barroeta	15,300 00
Hospital of Cartago	<u>9,638 00</u>
	44,915 50
	Various Accounts.
	Pesos.
Flint & Co.	4,684 67
Municipality of Cartago, notes and interest . . .	<u>6,884 50</u>
	11,569 17
Total	<u>6,697,326 51</u>

The *foreign debt* contracted in 1871 and 1872, in England, against the will of the nation, has been disastrous to it. It amounts to £2,000,000 in five per cent. debentures. Lately an arrangement was made under which the amortization of this debt will begin in 1917, instead of 1898, and with £10,000 per year, instead of £20,000. The government is also authorized to buy in its own bonds for their immediate liquidation.

The *floating debt* chiefly consists of private deposits, of the school-loan, amortization of which is made annually, of paper money which is received in very limited amounts, and of bills payable, mostly given for sugar and syrups to the "National Liquor Distillery" and drawn on thirty days' sight. The rest of the floating debt scarcely amounts to 50,000 pesos.

In figures the *interior debt* of Costa Rica may be represented as follows: 79,155.75 pesos in notes of war emission; 1,037,628.43 pesos for various accounts, private deposits, cash orders, municipal fund, ecclesiastical fund, etc., making a total of 1,116,784.18 pesos.

Another important factor in the commercial and economic life of Costa Rica is the money in circulation. Including every kind of emission, notes of the Costa Rica bank, national paper money, war-emission paper money, silver and gold coin, the money in circulation amounted in

	Pesos.		Pesos.
1882-83	4,395,089	1889-90	5,633,512
1883-84	4,129,518	1890-91	5,941,947
1884-85	3,707,434	1891-92	5,806,752
1885-86	3,619,261	1892-93	5,630,416
1886-87	3,899,975	1893-94	5,507,343
1887-88	4,210,733	1894-95	5,666,207
1888-89	4,762,885	1895-96	5,721,837

There were in circulation, in 1895-96, currency valued in pesos as follows: 3,820,404 of Costa Rica bank notes, 2764 national paper money, 98,669 war-emission paper money, 1,500,000 coined silver money, 300,000 coined gold money, total 5,721,837; or 20.08 pesos per capita of the population of Costa Rica.

As above indicated, the Government of Costa Rica is beginning to displace the notes of the Banco de Costa Rica by others issued by the government, maintained at par and guaranteed by a gold reserve or by gold certificates.

This monetary question is of such interest and importance, that the following translation is given from such parts of the reports of the Minister of Finance as relate thereto.

"The emission of gold certificates is necessary, as it would be impossible to keep the gold coins in circulation so long as the quantity of paper money issued by the bank, is far greater. Again, in order to avoid the difficulties which would arise from the constant retirement of this paper money, the gold certificates must be issued to furnish an adequate supply of currency. In this way also the Government has the advantage of utilizing the quantities of gold in deposit, and of acquiring by means of those certificates resources for fresh coinage of gold pieces."

"In order to avoid embarrassment in the commercial and economic life of the country it has been agreed with the Banco de Costa Rica to maintain parity between these certificates and its notes. By the monetary law of October 24, 1896, also parity with the actual silver peso was established. It was further agreed that the 'colon de oro,' the new gold coin, should correspond in intrinsic value with this standard of ratios."

"For these purposes, there had to be taken into consideration: First, the actual state of the national wealth, estimated in the already established credit circulating medium; second, the average range of international exchange during a number of years, and third, the average ratio of silver to gold during the same period. There had further to be considered the outstanding obligations of the interior and of the exterior debt, as well as pending negotiations as to exportable products, and the relation of the intrinsic value between gold and silver."

"In this way the following conclusion was reached:

That the 'colon de oro' should contain 700 milligrams of fine gold, in order not to complicate the situation created by the circulating notes of the Bank of Costa Rica, and in order to include an average exchange of 110 per cent. with respect to the pound sterling, and of 115 per cent. with respect to the American gold, as well as to create a relation of 1 to 26 between silver and gold. In consequence of this and for the purpose of giving to the 'colon de oro' the same fineness as has been given to the American gold coin, and as has been adopted by the Union Latina, it was established that the 'colon de oro' should have 778 milligrams of gold of 900-1000 fineness. Its relation to the gold coins of other nations is as follows:

1 American gold dollar	Colones 2.1495
4 shillings sterling, gold	" 2.0921
5 francs, gold	" 2.0737
4 marks, gold	" 2.0481

"In the contract with the Banco de Costa Rica, it was agreed that the Government should coin gold periodically. There are already 600,000 'colones de oro' in pieces of 10 colones in Costa Rica, and the Government ordered furthermore a second emission of 400,000 colones in pieces of 20 colones each, which will soon be issued. It is further willing to coin half a million more in the near future. The Costa Rican Bank, on the other hand, is obliged to retire a corresponding amount of its notes from circulation, and later, as soon as sufficient gold can be put in circulation, the exchange of bills is to be made by this bank in gold instead of silver."

There are sufficient reasons for believing that the Costa Rican Government will succeed in the realization of this highly important economic change without difficulty. As the Costa Rican Bank no longer has the exclusive privilege of issuing paper money, new banks must be established, with authority to issue circulating notes. As these banks will have to keep a reserve of national gold coins for the redemption of their paper money, there will be an abundance of currency of a fixed value. As the fine-

ness of the 'colon de oro' constitutes the best type of international exchange, there will in the future be slight fluctuations, and this will prove a most valuable guaranty of the stability of public wealth.

The value of the *National Government property* is estimated at 8,522,714.94 pesos. The principal items are:

	Pesos.
National distillery	900,000
Central custom-house	500,000
National theatre	905,815
Metal-building	286,432
National park	250,000
Insane Asylum	405,000
Pacific Railway	847,500
National Palace	200,000
Girls' High-School	350,000
Islands of San Lucas and Chira	400,865
Island of Uvita	200,000
Presidential Palace	150,000
Artillery armory	175,000
National printing establishment	140,000
National College in Alajuela	150,000
National Museum	40,000
Park of Morazán	159,185
Liceo of Costa Rica	145,000
Main armory	100,000
Old temple of La Merced	100,000
Ex-University	80,000
House in San José	100,000
Place in front of the National distillery	94,172
Custom-house in Puntarenas	100,000
Pier in Puntarenas	75,000
National telegraph	389,936
Palace of Justice	80,000
Hospital for lepers	65,000
Penitentiary	60,000
Police Stations	50,000
Mint	42,000

The private property owners are numerous and the orderly habits of the Costa Ricans are marked. Costa Rica being an essentially agricultural country, the necessity of a mortgage law was apparent to maintain and secure the equities of all. Hence an official registry of titles and mortgages was opened in 1867.

The *landed property* of the people of Costa Rica is registered in the "Registro Publico" in the following way:

First Inscription.

	Pesos.
1870, 5,243 fincas valued at	3,378,035
1875, 26,947 " "	19,090,557
1880, 43,281 " "	32,285,339
1885, 54,540 " "	39,228,567
1890, 65,858 " "	45,152,936
1895, 79,651 " "	59,244,326
1896, 82,614 " "	62,960,222
1897, 85,755 " "	67,711,398

Second Inscription.

	Pesos.
1870, 549 fincas valued at	502,503
1875, 9,580 " "	9,731,805
1880, 24,941 " "	25,339,594
1885, 41,286 " "	37,251,567
1890, 63,331 " "	52,702,051
1895, 89,276 " "	84,105,189
1896, 94,116 " "	90,654,569
1897, 99,309 " "	99,147,659

The following list gives the *number of fincas* (properties) and the amount in pesos for which they were *mortgaged*.

Year.	Fincas (properties).	Amount of mortgage.	Year.	Fincas (properties).	Amount of mortgage.
1868	130	147,931	1883	8,177	9,188,730
1869	435	580,936	1884	8,523	9,283,415
1870	632	826,176	1885	8,523	9,331,985
1871	845	1,112,060	1886	8,513	9,119,853
1872	1,166	1,440,810	1887	8,475	9,309,261
1873	1,565	1,889,789	1888	8,386	9,027,632
1874	2,007	2,667,565	1889	8,396	9,088,676
1875	2,483	3,480,011	1890	8,417	9,403,484
1876	2,909	4,105,197	1891	8,444	9,772,885
1877	3,422	5,359,158	1892	8,630	10,862,961
1878	3,972	6,141,955	1893	8,968	12,132,264
1879	4,748	6,700,357	1894	9,528	14,110,510
1880	5,528	7,944,641	1895	9,928	15,231,308
1881	6,563	9,033,333	1896	10,511	16,831,402
1882	7,373	9,113,818	1897	11,055	17,686,872

Net value of the fincas was:

	Pesos.		Pesos.
1870	2,551,858	1890	35,679,253
1875	15,610,546	1895	43,347,019
1880	24,340,698	1896	45,126,821
1885	29,896,583	1897	48,642,827

In the last fiscal year from April 1, 1896, to March 31, 1897, the Public Register shows the following movement:

	FIRST INSCRIPTIONS.			SECOND INSCRIPTIONS.		
	Rural Properties.	Value in Pesos.	Urban Properties.	Value in Pesos.	Rural Properties.	Value in Pesos.
San José . . .	343	630,315.26	728	736,907.34	565	1,938,845.87
Alajuela . . .	559	793,054.34	440	947,144.77	1,313,350.17	346,099.09
Heredia . . .	96	593,588.00	322	160,832.85	723	3141, \$4,751, 176.43; sec-
Cartago . . .	272	529,045.36	253	139,220.98	477	704,950.93
Guanacaste . .	15	13,753.50	7	4,200.00	497	454,726.09
Puntarenas . .	25	41,592.65	23	11,658.50	972,605.11	501
Limon . . .	44	206,483.93	14	23,378.95	11	10,370.00
Total . . .	1354	2,727,833.14	1787	2,023,343.39	2332	15,945.00
						22,585.65
						266.52 pesos.
						3,493,513.63
						2861

For the same period the "Public Register" furnishes the following statistics of mortgages on real estate estimated in pesos:

	Distribution of Mortgages.				Cancellations.			
	Rural Properties.	Sum Secured.	Urban Properties.	Sum Secured.	Rural Properties.	Paid Off.	Urban Properties.	Paid Off.
San José . . .	211	990,051.28	294	796,975.98	116	283,513.97	211	539,572.67
Alajuela . . .	152	348,825.25	60	104,565.73	70	304,672.37	33	188,675.39
Heredia . . .	63	190,864.31	77	187,202.05	31	111,107.42	28	41,781.50
Cartago . . .	166	409,518.63	139	263,261.16	111	346,415.03	71	78,297.61
Guanacaste . .	14	86,281.03	3	20,000.00	..	..	..	..
Puntarenas . .	12	41,843.00	4	43,000.00	4	32,952.00	2	27,498.00
Limon . . .	51	199,893.84	16	19,300.00	28	139,917.61	13	95,505.35
	669	2,267,277.34	593	1,434,304.92	360	1,218,578.40	358	971,330.52

	Partial Cancellations in Pesos.			
	Rural Properties.	Amortized Debt.	Urban Properties.	Amortized Debt.
San José	33	169,835.81	37	87,560.81
Alajuela	13	42,414.00	2	4,400.00
Heredia	2	3,810.00	4	7,700.00
Cartago	22	238,746.76	15	18,368.42
Guanacaste . . . . .	..	..	..	..
Puntarenas . . . . .	..	..	..	..
Limon	35	66,000.00	1	17,367.00
	105	520,806.57	59	135,396.23

RÉSUMÉ.

Number of Mortgages.	Sum Secured.
	Pesos.
Rural	669
Urban	593
	1262
	2,267,277.34
	1,434,304.92
	3,701,582.26

RÉSUMÉ.

Total and Partial Cancellations.	Pesos.
Rural	465
Urban	417
	882
	1,739,384.97
	1,106,726.75
	2,846,111.72

Since 1865 the mortgage law permits this mode of converting real estate; upon due official registration its value may be divided into shares, each represented by a cedula or bond, on which as collateral security money can be raised at any time with perfect safety.

This law is included in the Codizo Civil of 1887 and

since that time cedulas to following amounts have been issued:

	Pesos.		Pesos.
1888	12,000	1893	336,800
1889	60,500	1894	482,000
1890	70,200	1895	666,000
1891	170,100	1896	1,002,000
1892	380,000	1897	1,381,700

The municipal taxes are not high. The owners of real estate are required to pay only the taxes devoted to the maintenance of municipal police, street lighting and the domestic supply of water.

Other municipal taxes comprise license fees for commercial business, for slaughtering cattle and hogs; for wine houses; taxes for registering of dogs; taxes on tanneries, breweries, coffee-cleaning establishments, cemeteries, etc.

Other important factors of the economic life of Costa Rica are the existing *banking establishments*. The first bank of Central America was established in 1857, in Costa Rica, by Crisanto Medina. This institution ceased and, in 1863, was replaced by the Banco Anglo-Costaricense with an authorized capital of 2,000,000 pesos and a paid-up capital of 1,200,000. This bank still exists, together with the Banco de Costa Rica established in 1867 with a paid-up capital of 2,000,000 pesos. It incorporated with itself the former Banco de la Union established in 1877.

The Bank of Costa Rica has had from the Government the privilege of issuing paper money to the extent of four times its cash on hand. The average circulation of these bank notes since 1882 has been as follows:

	Pesos.		Pesos.
1882-83	35,000	1889-90	2,911,479
1883-84	56,400	1890-91	3,249,914
1884-85	168,890	1891-92	3,037,167
1885-86	210,170	1892-93	2,820,892
1886-87	1,004,010	1893-94	3,079,067
1887-88	1,518,290	1894-95	3,565,041
1888-89	2,191,930	1895-96	3,820,404

This issue privilege was withdrawn in 1897 on the introduction of the 'colon de oro,' and a special arrangement was made with the bank to uphold the contemplated change from a silver to a gold standard.

The Banco de Costa Rica, on July 15, 1897, had a reserve fund of 745,000 pesos and a dividend account of 50,000. It has branches in Heredia, Cartago and Alajuela. The situation of this bank at the same date was in pesos as follows:

ASSETS.	LIABILITIES.
Cash on hand:	
Coin 1,268,682.33	Capital paid up . . . 2,000,000.00
Checks against the Anglo-C. R. Bank 10,075.43	Reserve fund . . . 745,000.00
	Dividend account . . . 50,000.00
Foreign correspondents . . . 191,073.64	Discounts 120,984.70
Accounts current 335,324.39	
	Notes in circulation 3,929,972.50
	Deposits, on time or demand 1,108,424.82
Bills receivable . . . 5,273,304.39	
Branch Banks . . . 373,595.05	5,038,397.32
Bonds of School-loan 40,607.50	Securities in commission for collection 394,420.74
Various obligations to collect 254,101.99	Government on account 'Colones de Oro' 600,000.00
Immovable property 167,052.54	
Furniture 10,000.00	
Stamps 1,433.00	
Sundry accounts 29,131.76	
	8,948,802.76
Securities in commission for collection 394,420.74	
Deposit of 'Colones de Oro' 600,000.00	

The bank is ready to retire 540,000 pesos of its own notes in correspondence with the first gold deposit of 600,000 pesos. In view of the satisfactory transactions of the Bank 20 per cent. was distributed in dividends for the fiscal year ending in 1897. Its manager is Mr. José Andrés Coronado. Its Board of Directors include Messrs. Francisco Peralta, Aniceto Esquivel, Fabian Esquivel, Daniel Nuñez and Manuel Sandoval.

The manager of the Banco Anglo-Costaricense is Mr. Percy G. Harrison, and its Board of Directors is composed of Messrs. Adrian Collado, Simeon Guzmán, Telésforo Alfaro, Gerardo Jager and Mariano Montalegre.

The situation of the Banco Anglo-Costaricense on June 30, 1897, was in pesos as follows:

ASSETS.	LIABILITIES.
Cash on hand	281,869.25
Securities for collection in San José	1,208,192.54
Mortgages	530,729.51
Securities for collection in San Mateo,	739.83
Credits current	1,739,661.88
Credits in £ sterling	185,698.55
Shares of the Mercado de San José (165)	485,545.34
Bonds of the Guatimalan Central Railway	8,250.00
Immovable property	15,000.00
Furniture	20,000.00
Debtors abroad	82,778.37
Remittances due	25,969.48
Securities in commission for collection	108,747.85
Money for expenditure	188,014.10
Exportation notes	1,500,649.79
Interest on deposits not due	93,275.00
Various debtors	1,781,938.89
	8,484.45
	14,602.24
	4,651,298.45
	4,631,298.45
	1,410,000.00
	371,443.60
	16,778.00
	380,601.23
	762,822.83
	436,403.84
	22,202.38
	458,606.22
	188,014.10
	1,500,649.79
	93,275.00
	1,781,938.89
	700.00
	180,000.00
	180,700.00
	39,779.55
	17,450.96
	57,230.51
	4,631,298.45
	1,410,000.00

Foreign commercial obligations were settled through these banks on the following terms: Drafts at three days' sight on Paris cost one per cent. less than on London on same time; those at ninety days' sight on Paris or London cost one per cent. less than at three days' sight; those at sixty days' sight, on New York, cost two per cent. less than on three days' sight. Submarine cable transfers of money cost two per cent. more than by three days' sight drafts with the cost of telegraphing added.

Until the 24th of March, 1897, the Bank of Costa Rica sold drafts on New York for five points more than for those on London. Since the 25th of March, 1897, the difference of exchange between those cities has been eight per cent.

The rates on London, in October and November, 1897, were 127, and those on New York were 135.

XIII.

POLITICAL ORGANIZATION.

Costa Rica is a republic, the government of which is representative, the representatives being classified so that one-half retires every two years. Since 1825 Costa Rica has had nine constitutions, the last one having been promulgated in 1871.

The government is administered through three distinct branches; namely, the legislative, executive and judicial.

Legislative powers are vested in a single house whose members are chosen, one for every 8000 inhabitants, for a term of four years by an electoral college. This body is called the "Constitutional Congress" and assembles every year on May 1 for a sixty days' session, which may be extended for thirty days more.

The executive power is vested in the President of the Republic who is elected for four years and has the power of naming or removing his four cabinet ministers.

Annually, in May, Congress appoints, for a term of one year, three substitutes called "designados." During the intervals between sessions of Congress legislative power is represented by a board of five commissioners appointed by Congress.

Judicial power is lodged in a Supreme Court and in subordinate tribunals as constituted by law. The judiciary is changed every four years.

Suffrage is restricted to popular conventions which choose a limited number of electors. These meet in a body called the electoral assembly and proceed to choose the President of the Republic and the Congressmen.

The Republic is divided into five Provinces and two Comarcas or Territories. Both are divided into Cantones, and the Cantones are subdivided into districts.

The Territories are represented in Congress in the same way as the Provinces.

Each Canton has a municipal organization popularly elected and a political chief named by the President.

In each of the Provinces or Territories there is a Governor, and a military commandant also named by the President, and a Judge of First Instance appointed by the Supreme Court.

Costa Rica, as soon as she became a member of the Central American Confederation, organized a judiciary of her own consisting of a superior court, several tribunals of first resort in the provinces, and the alcaldes of towns who were justices of the peace with jurisdiction over petty affairs both civil and criminal. The Supreme Court has since undergone many changes.

The Supreme Court is a Court of Law composed of five justices. Two Courts of second instance have three magistrates each.

In each of the Provinces and in the Comarca of Puntarenas there are judges having criminal and civil jurisdiction.

In the chief towns of each Canton the alcaldes act in civil cases of minor importance, and in criminal cases are judges of petty offenses, and for graver charges are committing magistrates.

In the districts the justices of the peace and the police are charged with maintaining the public peace and they act for small misdemeanors in a summary way.

For fiscal affairs there are an Inspector General of Hacienda, an alcalde of Hacienda, and a National Judge of Hacienda. There is also a special judge of mines residing at San Mateo.

Punishments are generally neither cruel nor protracted. They comprise confinement in a prison or penitentiary, transportation, or a fine. The penitentiary is on the island of San Lucas.

In 1841 Costa Rica codified its civil and penal jurisprudence, amending the code materially seventeen years later. This has been the basis of her legal progress and is in force except as modified by subsequent statutes. Among the more important amendments are these: by the Penal Code in effect since 1880 the death penalty is abolished, as well as humiliating and cruel punishments; 1886 there was promulgated a new Civil Code, in which are prominent civil marriages, the right of divorce and the civil equality of woman.

The Code of Commerce in force, founded on Spanish customs, was issued in 1853. The Fiscal Code of to-day went into effect in 1885.

The Military Code of 1871 was superseded in 1884 by another more in accordance with modern institutions.

The Jury System in criminal cases has been in force since 1873.

The Municipal Statutes prevailing to-day were issued in 1867; the General Police Regulations in 1849.

The "Ley Organica" of tribunals was framed in 1845 and modified slightly in 1852.

In 1865 there was promulgated the law for a creditor's proceedings; the mortgage law was passed in 1865.

Higher and professional education was provided for in 1843 by a law known as the "Statutes of the University of Santo Tomas," and in 1886 there was enacted a law for common education.

The Registry of property and mortgages was opened in 1867, since which time various reforms have been introduced into the Mortgage Law.

There are besides many special laws, like the Mining Statutes decreed in 1830; the Water Law of 1884 now in force; the Consular Regulations, and others.

By decree of 24th of November, 1863, the decimal system for moneys now in use was adopted. By decree of 10th of July, 1884, the metric system was adopted for weights and measures.

All Costa Ricans between eighteen and fifty years of age are obliged to do military service according to law.

The army is divided into two parts; the first includes, under the head of active service, all soldiers from eighteen to forty years of age; the second comprises all the rest under the head of "Reserve."

There is a third division, known as the National Guard, including all citizens capable of shouldering arms outside of the foregoing.

XIV.

HISTORY.

Until 1540 Spain reserved for the Crown that part of the territory of Veragua lying west of the portion which had been granted to the heirs of Columbus, but in that year it was erected into a province called Costa Rica. According to the narrative of Colonel G. E. Church, within a period of sixty years from the date of its discovery some ten feeble exploring and colonizing expeditions, mostly from Panama, were fitted out to occupy Costa Rica, but they all proved disastrous, the only result being the exasperation of the natives whom the Spaniards plundered, butchered and treated with signal barbarity.

Between 1560 and 1573 the limits of Costa Rica were defined and confirmed by Philip II., those on the Atlantic Coast being the same as to-day, so far as Nicaragua is concerned.

In 1562 Juan Vasquez de Coronado was named Alcalde and Mayor of the Province of Costa Rica and Veragua. He founded the City of Cartago which remained the capital until 1823.

Up to 1622 fifteen governors succeeded Vasquez, but disappointed in their efforts to find gold, to enslave the Indian population, or to make the country prosperous, they allowed it to lapse into a barbarism far worse than it was at the time of its discovery.

Barrantes says that in 1622 it had but fifty Spanish families, and these were in a condition of extreme poverty.

A report, which the King ordered to be made about that time for purposes of taxation, stated: "In Costa Rica no mines of any metal are worked; no gold-washings, no

indigo cultivation, no sugar-mill exist. The people cultivate only maize and wheat. There is no money. The poverty is such that the flour and biscuits which are not consumed are exchanged for necessary clothing."

When Gregorio de Sandoval was named Captain-General, in 1634, and reached his port from the Atlantic Coast, he noted the importance of having a better port than that then existing at the mouth of the river Pacuare, and, therefore, in 1639 founded that of Matina, connecting it by a mule-trail 102 miles long with Cartago.

From 1666 to the end of the century both the Caribbean and the Pacific coasts were ravaged by piratical expeditions.

In 1718 Diego de la Haya y Fernandez was appointed Captain-General. The following year he reported to the King on the condition of Costa Rica, which he pronounced the "poorest and most miserable of all America. The current money is the cacao seed, there not being a piece of silver in the entire country. There is not an eatable sold in street or shop. Every family has to sow and reap what it consumes or expends during the year. Even the Governor has to do this or perish. Meanwhile the inhabitants of the province are contentious, chimerical and turbulent, and among the whole of them there are not forty men of medium capacity."

In 1797 the governorship and military command were conferred on Tomas de Acosta, but after ruling for twelve years he wrote: "There is not in the entire monarchy a province so indigent as this, for some of the inhabitants are clothed with the bark of trees, and others, that they may go to church, hire and borrow from their friends."

This may be said to have been the condition of the country when the domination of Spain ended.

The fifty-eight Governors, who, since 1563, had followed the ill-fated Vasquez de Coronado, had been little more than managers of a neglected farm, which scarcely yielded sufficient to enable its laborers to eke out a miserable, half-starved existence. They had killed off or

enslaved the indigenous population. Their poverty had precluded the opening of roads or the clearing and cultivation of the lands, while the exactions of Spain and its barbarous political and fiscal policy had smothered all commercial interests. In fact, Costa Rica had, during three centuries of Spanish domination, constantly retrograded, and when the Spaniard retired from it, he left it less civilized than when he entered it in 1502.

On September 15, 1821, Costa Rica joined Nicaragua in a decree of independence. On January 10, 1822, she proclaimed her union with the Iturbide Empire of Mexico under "the plan of Iguala," but in 1824 she resumed her independence, declared herself a Republic, elected Juan Mora as President, who remained in office for eight years, and became one of the United Provinces of Central America. This weak, unmanageable union underwent a slow disintegration from 1838 to 1839. It fell in pieces for want of internal communications, like the old Columbian federation of New Granada, Venezuela and Ecuador.

Among the twenty-four presidents and dictators who have governed Costa Rica since 1824, several have been men of marked intelligence and devoted patriotism, and under their administration the country has slowly emerged from its former depression, until to-day it may be said to be in a healthy political and commercial condition.

Costa Rica is very much indebted to its first President, Juan Mora. Other successful Presidents were: Juan Rafael Mora, from 1850 to 1859; General Tomas Guardia, from 1872 to 1876, and again from 1878 to 1882; Bernardo Soto, from 1885 to 1889, and Rafael Iglesias, since 1894.

Since its independence there have been but few stirring events to agitate the country. The most important of them was the efficacious aid it gave to Nicaragua in 1857 in crushing the filibuster Walker, whose object was to add Nicaragua as slave territory to the United States.



CENTRAL AMERICA.

COSTA RICA.—Provinces, Lakes, Mountains, Rivers, and Towns.

GUATEMALA.—Departments, Lakes, Mountains, Rivers, and Towns.

HONDURAS.—Departments, Creeks, Lakes and Lagoons, Mountains, Rivers, and Towns.

NICARAGUA.—Departments, Creeks, Lakes, Mountains, Rivers, and Towns.

SALVADOR. Departments, Lakes, Rivers, and Towns

BRITISH HONDURAS.—Creeks, Lakes and Lagoons, Mountains, Rivers, and Towns.

1 Towns.

Pop.	Towns—continued.	Pop.	Towns—continued.	Pop.
19.	Naranjo, R-22.....		San Lucas, R-20.....	
	Nicoya, Q-19.....	5000	San Marcos, R-21.....	
	Ochoa, P-21.....		San Ramon, Q-20.....	
	Old Harbor, R-24.....		Santa Barbara, Q-21.....	
S-	Obispo, Q-19.....		Santa Cruz, Q-18.....	5690
	Pacaca, R-21.....		Santa Maria, R-22.....	
20.	Paraiso, R-22.....		Santa Rosa, P-18.....	
	Punta Burica, U-24.....		Sarcero, Q-21.....	
	Puntarenas, R-20.....	5000	Sardinal, Q-18.....	
	Puntarenitas, U-23.....		Savanna, R-21.....	
	Puriscal, R-21.....		Squires, Q-22.....	
	San Antonio, R-21.....		Tendal, Q-19.....	
5692	San Carlitos, Q-21.....		Terraba, S-23.....	
1200	San Cristobal, R-22.....		Tirives, R-20.....	
	San Isidro, Q-22.....		Tullica, U-24.....	
	San Joaquin, Q-21.....		Turealba, R-22.....	
	San Jose, R-21.....	25000	Ujarras, Q-20.....	
	San Jose de Cabecar, S-23.....		Union, R-21.....	
	San Juanillo, Q-21.....		Uruchico, S-23.....	

nd Towns.

Pop.	Towns—continued.	Pop.	Towns—continued.	Pop.
	San Miguel, G-6.....		Sauce, F-11.....	
	San Miguel, G-9.....		Schenaju, F-10.....	
	San Miguel Acatan, F-7.....		Sipacapa, G-6.....	
	San Pablo, H-5.....		Solola, H-7.....	5000
	San Pablo, H-7.....		Suchiate, H-5.....	
	San Pedro, F-9.....		Sumpango, H-8.....	
	San Pedro, H-8.....		Tablones, G-9.....	
	San Pedro, H-7.....		Tacana, G-5.....	
	San Pedro, H-9.....		Tactic, G-9.....	
	San Pedro Jocopilas, G-7.....		Tajumulco, G-6.....	2000
	San Pedro Soloma, F-7.....		Taxisco, I-8.....	
	San Rafael, H-6.....		Tecpam, H-8.....	7025
	San Rafael, I-9.....		Tejutla, G-6.....	
	San Ramundo, H-9.....		Tenedores, F-12.....	
	San Rito, C-10.....		Tescuaco, I-7.....	
	Sansar, H-9.....		Tetitlan, G-6.....	
	Sansaria, H-9.....		Tikal, B-10.....	
	San Sebastian, G-6.....		Tocoy, G-9.....	
	San Sebastian Coatan, F-7.....		Todos Santos, G-6.....	
	San Sebastian Lemoa, H-7.....		Totonicapan, H-7.....	26000
	Santa, G-6.....		Trapiche, E-8.....	
	Santa Ana, I-7.....		Trapichillo, G-6.....	
	Santa Ana Huista, F-6.....		Tual, F-9.....	
	Santa Barbara, G-6.....		Tucuru, G-9.....	
	Santa Barbara, I-7.....		Tuluche, C-11.....	
	Santa Catarina, H-7.....		Tumanu, G-9.....	
	Santa Catarina, I-10.....		Tumbado, H-6.....	
	Santa Cruz, F-9.....		Tusancal, E-10.....	
	Santa Cruz, F-11.....		Tutulapa, G-6.....	
	Santa Cruz, H-8.....		Union, H-6.....	
9.	Santa Cruz del Quiche, G-7.....	6000	Union Parrios, G-9.....	
Ja,	Santa Eulalia, F-7.....		Uspanlan, G-8.....	
	Santa Isabel, E-10.....		Usumacinta, C-7.....	
	Santa Isabel, F-12.....		Usumatan, G-10.....	
	Santa Lucia, I-7.....		Varilla, C-7.....	
	Santa Lucia, G-7.....		Victoria, E-9.....	
	Santa Maria, F-12.....		Villanuera, H-8.....	
	Santa Maria, H-6.....		Xox, D-10.....	
	Santa Maria Cahabon, F-10.....		Yalat, C-9.....	
	Santa Rosa, D-8.....		Yalchitan, C-8.....	
	Santa Rosa, I-9.....	6237	Yaxcabnal, F-9.....	
	San Thomas Ch, H-7.....		Yaxche, D-11.....	
	San Toribio, D-11.....		Yaxia, E-10.....	
	Santo Tomas, F-12.....	19000	Zacapa, G-11.....	3000
	Saoo, G-9.....		Zacuelpa, G-8.....	
	Sarstoon, F-11.....		Zaragoza, H-8.....	
	Satinta, C-10.....		Ziquinala, I-8.....	
			Zoo, C-10.....	
			Zuni, H-7.....	

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